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# THE DUBLIN JOURNAL

OF

## MEDICAL SCIENCE.

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JANUARY 1, 1881.

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### PART I.

### ORIGINAL COMMUNICATIONS.

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ART. I.—*Practical Notes on some Local Forms of Eczema.*  
By J. MAGEE FINNY, M.D., Dubl.; F.K.Q.C.P.I.; Visiting Physician to, and Lecturer on Dermatology and Clinical Medicine in, the City of Dublin Hospital.

(Continued from Vol. LXX., p. 297.)

#### II. ECZEMA PALMARE.

ECZEMA of the palm of the hand or sole of the foot is comparatively of rare occurrence, and when confined to these localities is still more rare. Moreover, the disease lacks many of the usual characteristics of eczema, as it attacks other parts of the body, and resembles, at times with much similarity, psoriasis and a squamous syphilide. At all times an accurate diagnosis is a matter of some difficulty.

Eczema palmare is commonly met with in patients over thirty years of age. Sex seems to have little, if any, ætiological influence, and yet it occurs more frequently in men than women. The probable explanation is to be found in the trade or occupation which exposes the palm to some constant irritant—as, for instance, bottle-washing, barmen, digging, &c. In many instances no local cause can be discovered, and the eruption seems in such cases to be the expression of a gouty diathesis, often brought out by worry or anxiety.

The whole palm may be involved by the disease, or but part. In the latter case I have seen it more often confined to the thenar eminence and the adjoining natural folds. It may be found in both

hands—but, if so, one palm is more extensively and deeply engaged than the other.

When the natural thickness of the skin of the palm is considered, and its slight tendency to exfoliate, it will be readily understood how the products of eczematous inflammation, instead of being rapidly exfoliated, become pent up, and, becoming dried up, produce a dry, cracked, brittle, and thickened condition of the epidermis.

In addition to its scaly appearance, there are generally deep fissures intersecting the palm, of a red colour and readily bleeding on any forcible extension of the hand. It is to this appearance of eczema Dr. McCall Anderson applies the term “eczema rimosum”—a state of parts not uncommonly seen over the backs and wrists in frosty weather in stablemen, grooms, and all those whose occupation exposes the skin to frequent wettings. Owing to the thickening of the skin, and the pain and bleeding which follow extension, the hands are of but little use to their owners, and when in this state, they are carried in a semiflexed position.

To add to the annoyance, and, indeed, actual sufferings, of the patients, there is the irritation, tingling, and itching attendant on eczema. Nothing but firm pressure on something cold and hard, or rubbing with a coarse cloth, or fierce scratching, will allay this itching, and as this symptom is usually most pronounced about the time of retiring to bed, sleep is often broken, and a haggard, nervous look is induced.

The absence of vesicles, gummy exudation, and often erythema, in eczema palmare, and the presence of a dry indurated patch or patches covered with scales, have led to the difficulty of diagnosis between it and the other scaly affections of the palm—psoriasis and syphilis. Within the last twelve months some difference of opinion has been advanced in the medical periodicals as to the existence of one of these diseases. Dr. Spender<sup>a</sup> would confine all such eruptions to two classes—modified eczema rimosum or syphilitic psoriasis. “It is plain,” he says, “beyond all cavil that there is no such thing as psoriasis palmaris, except as a syphilide.” A similar view, if not so strongly expressed, is admittedly entertained by Dr. Robert Liveing:<sup>b</sup>—“There can be little doubt that simple psoriasis so rarely attacks the palm or sole that practically we may say these parts are exempt from it.” “The changes which occur in the palms are exactly the same as those commonly met with in the

<sup>a</sup> Brit. Med. Journal. June, 1879. P. 932.

<sup>b</sup> Ibid. 1879. Vol. II., p. 8.



hands of patients who suffer from ordinary eczema in other parts of the body. It is, therefore, in my opinion, a misapplication of the term to call them psoriasis palmaris."

Dr. M<sup>c</sup>Call Anderson, however, and others, among whom I would take my stand, recognise the three distinct scaly eruptions of the palm to which I have referred—eczema, psoriasis, and a scaly syphilide. In addition to these diseases in the localised or circumscribed form, the palm may be attacked as part of the general cutaneous eruption of diffuse psoriasis and dermatitis exfoliativa universalis. These diseases are extremely rare, though during the last year it has been my good fortune to have had an example of each under my care. One instance, which was well known at the hospital, was that of a man (R. T.) aged sixty, who for seventeen years has been the subject of psoriasis. On two occasions within the last five years (one being in last spring) the psoriasis became general, and attacked the palms and soles; and yielded to treatment adapted to psoriasis without mercury or iodide of potassium, a comment on the statement that "even in the severest forms of general psoriasis these regions (palms and soles) escape."

The disease between which and eczema, for obvious reasons—moral and therapeutic—it behoves us to make an accurate diagnosis, is syphilis affecting the palm. The necessity for this diagnosis is increased by the fact that by very many physicians syphilis is accredited with *every* scaly disease of the palm. Such was the teaching I myself received at the hands of the distinguished leaders of the medical profession in this city, and I believe I am not overstating the case when I assert that it is the opinion held, if not asserted, by the majority of practitioners at the present time both here and elsewhere. However, more extended observations and increased opportunities of studying skin-diseases, showed me my error; and they taught me that, while a scaly disease of the palms was due, in the great majority of instances, to syphilis, it might be due to one of two other causes, psoriasis and eczema.

The differential diagnosis between syphilitic affections of the skin and eruptions resembling them must be made, in most cases, without the help of the *history* of primary syphilis—at least, this is so in private practice, and with patients of the gentler sex. It should be based upon the colour—the "coppery" hue of the eruption, and the "earthy" hue of the complexion; the slow development and long persistence of the rash; the absence, as a rule, of itching or tingling, so common a symptom in eczema; the seat of

the rash, and the coexistence of mucous patches, and of the other well-known evidences of constitutional disease.

In addition to these general aids to diagnosis, which should always be borne in mind—but many of which too often may be of little use, owing to the palmar eruption being, perhaps, the only sign of syphilis which the patient exhibits at the time he is under observation (Anderson)—there are certain local peculiarities of the squamous syphilide. The syphilitic eruption on the palm usually commences as a small spot near the centre, of a copper colour, and it gradually extends circumferentially with an abruptly raised or dirty ragged edge. As the patch enlarges, the centre may heal up so as to produce an irregularly-formed circle. Moreover, although sometimes the cuticle becomes thickened and fissured, it never assumes the deeply-fissured and bleeding appearance to be met with at some stage of the course of eczema palmare.

There are, notwithstanding these lines of demarcation, certain cases where—in the absence of evidences of disease elsewhere—the diagnosis, at first sight, becomes a matter of pure speculation, and cannot be positively arrived at without observing the influence of mercury or potassium iodide on the eruption.

The management of a case of eczema palmare must be based on the general principles to which I have already referred in the number of this Journal for October, 1880, page 294, and which it is not necessary to recapitulate. It must, however, be acknowledged that it is often very difficult to succeed further in the treatment than to limit its extent, or to cause its disappearance for a time, since it is peculiarly liable to recur again and again. Many patients have told me that they have had the disease off and on for years.

The following cases will exemplify some of the local measures I have found successful:—

CASE I.—Mrs. Caroline B., aged thirty-five, children's nurse, consulted me at the Skin Department for Out-patients of the City of Dublin Hospital on 19th June, 1880. Two months before eczema attacked the knuckle of the right thumb, and spread to the nail, which it has deformed. The disease then, about three weeks ago, extended down the ball of the thumb, and when seen by me it engaged the palmar surface of the ball, the adjoining natural fold, and the skin just beyond it. It was very itchy, scaly, rough, and brittle; the cuticle red and thickened, and in the line of the cleft a moderately deep fissure.

An india-rubber thumbstall was ordered to be worn constantly, and each night the finger to be covered with vaseline. In ten days all

induration and itching were gone; the skin of the thumb was soft and thin. The india-rubber was continued by day, and at night an ointment of hydrarg. ammoniat. (gr. xx., ad. 3 j.) was applied, and in three weeks the cure was complete.

In suitable cases, and where sufficiently early treated, "a rapid and brilliant result sometimes follows upon the use of vulcanised india-rubber gloves and stockings" (Anderson<sup>a</sup>).

Recovery is usually by no means so rapid as in the foregoing instance, and various applications will be needed before the desired result be obtained.

CASE II.—Ellen A., aged fifty-four, the mother of ten children, and who had always been healthy, and had lived for many years in county Cork, consulted me on May 1st, 1880, with eczema of left palm. Her trade was that of a tailor, but I could find no special cause for the eruption.

The greater part of the palm was affected by five distinct circular patches. She said the centre patch, covered with dry, dull-white, brittle scales, has existed for a very long time, and that had it not extended she would not have sought medical treatment, but that the others had made their appearance within a week, and had so crippled her hand as to interfere with her work.

There was a history of localised patches of eczema having appeared on the forehead and neck several years ago, and even now in the latter place there is an indurated, red, itchy eruption, which is said to have exuded slight moisture.

The diagnosis between eczema palmare and a syphilide was not easy, as the general history and surroundings threw little light on it, and there were several scars visible on the forehead and neck, which suggested the possibility of a specific origin. The absence of the complexion, or the copper hue of rash peculiar to syphilis, and the presence of severe itching along with the rather rapid increase of the original patch, made me decide in favour of eczema—an opinion the subsequent progress of the diseased part confirmed beyond doubt.

Having read in *The British Medical Journal* (Nov. 8th, 1879) of the unexpected good results which followed the application of anodyne colloid (prepared by Ferris and Co.) in a case described by Dr. Theobald A. Palm, I determined to give it a trial in this case; but I am bound to say neither by it nor by collodion flexile (with both of which I have experimented in Ellen A. and in other similar cases) did I obtain satisfactory results. For a time it seemed to allay the itching (for this reason the amyl colloid is preferred by patients) and to render the fissures less deep,

<sup>a</sup> A Practical Treatise on Eczema. 3rd Ed. P. 194.



but for some reason—perhaps its inadequate application—it stopped short of producing a cure.

At the end of July the note taken showed a little improvement, for, though the patches had united and the eruption had now engaged the whole palm, from the fingers to an inch over the carpal surface, it was less indurated, cracked, or scaly, and was of a redder tint, while the centre was healing.

Better results might have occurred had the patient attended the Skin Department with regularity, but as it was only at long intervals that she put in an appearance, the benefits of the treatment were to a great extent neutralised. She was now ordered the white precipitate ointment (B. P.), which was directed to be constantly applied by day and night.

When next seen, on September 11th, great improvement had ensued: The whole of the palm, except at the flexures of the fingers, was completely cured—a result she attributed altogether to the ointment, and one she seemed not a little proud of.

I saw this patient once again in October, when she was free from any relapse, and the whole hand was well.

The only other treatment was an occasional bottle of a mixture composed of 5 grains of iodide of potassium (which I am in the habit of prescribing in every case of induration of the skin, in eczema or psoriasis), 3ss. liq. hydrarg. perchlor. in infusion of cinchona. This may have acted as an alterative, but it could not have much affected the eruption, as she took but four bottles in as many months.

The last case I purpose referring to deals with the advantages of the oleate of zinc, which seems a combination well deserving of general application in eczema in every stage and of every degree. It will, however, answer best in moderately chronic cases, where the thickening of the skin is not extreme. As it is a stiff ointment it may be diluted with vaseline, petroleum, or ozokerite, and, spread upon linen, should be constantly and closely applied. In giving the oleate of zinc this prominence I do not wish to underrate the efficacy of other applications, and in particular the ung. hydrarg. ammoniat., which has been my favourite for many years, and which, alone or in combination, I have employed to almost the exclusion of all other preparations in eczema.

CASE III.—Mrs. F., aged forty, came under my care in last July with eczema palmare of the left hand, forming a fissured, scaly patch two inches by one and a-half. She has another patch on the left forearm, and the third digit of the right hand; this latter presents deep fissures. She states that twelve weeks ago the eruption appeared first in the lips and eyebrows, and after that on the finger and palm; that the pruritus is

intense, varying between a scalding, an itching, and a tingling, and being relieved by at times scratching with the nails, and at others by rubbing with a rough cloth.

In addition to internal treatment, to correct dyspeptic symptoms, oleate of zinc was the only external application, and it suited admirably in diminishing the pruritus and reducing the infiltration. After a month's treatment the palm was nearly well, the finger participating in the improvement. The patch of the dry lichenoid eczema on the wrist showed least progress.

The foregoing cases sufficiently exemplify the treatment likely to be successful in subacute or slightly chronic forms. Some authorities prefer Hebra's ung. lithargyri, or, what I have found even better, Kaposi's modification thereof—that is, equal parts of vaseline and lead plaster thoroughly mixed by heat, with the addition of a few drops of ol. bergamotæ. There are, however, cases in which this treatment would be very tedious, owing to the extreme density of the tissues, or when, owing to certain occupations, its constant application (even under the covering of a glove) would prove impracticable. In such cases a more rapid solution of the thickened epidermis is necessary, prior to using curative ointments. The best solvent is potash, and it may be used either, as Dr. Liveing suggests, as a lotion, applied on lint under gutta-percha, in the strength of from two to four drachms of liquor potassæ to eight ounces of water, or by painting the strong liq. potassæ itself over the patches, or by rubbing in firmly *sapo mollis* (Anderson, Hebra).

In these latter cases care must be taken so as not to overreach the object in view or to produce severe pain, and, when the infiltration diminishes, to reduce the strength of the solvent.

Whatever may be the line of treatment adopted there is one thing not to be forgotten, and that is, the difficulty of keeping the parts at rest; and no greater aid to recovery can be suggested than to keep the hand flexed, so as to prevent, as much as possible, the fissures in process of healing from being strained, if not torn apart, by movement.

ART. II.—*On a New Method of Treatment of Relaxation of the Membrana Tympani.* By WILLIAM A. M'KEOWN, M.D.; Surgeon to the Ulster Eye, Ear, and Throat Hospital, Belfast.

As a considerable time has elapsed since the reading of this paper, the first part of which appeared in the number of *The Dublin Journal of Medical Science* for June, 1880 (Vol. LXIX., page 502), I purpose now to somewhat modify what remains for publication by the introduction of notes of some well-marked cases which have been recently under treatment.

In the following pages "hearing distance" means the hearing distance of the patient for a moderately-toned voice (in each case my own). In testing patients I speak as nearly as possible in the same tone. The distance stated represents the greatest distance at which the patient can repeat accurately what I say. I usually read from a book, as I think testing by questions on familiar subjects is not at all reliable. I consider a patient to hear remarkably well when he can repeat what I say at 14 to 18 feet. It is to be remarked that this mode of testing only enables me to estimate approximately the changes in the hearing of my own patients, and does not afford any basis for the comparison of my results with those obtained by other practitioners. Science has yet to furnish us with a proper standard. The watch as a test is worthless, except for one sound; and further, many persons who can hear the watch very well, hear the human voice very badly. Further, patients care very little whether or not they hear the tick of a watch if they can hear ordinary conversation. Professor Hughes' audiometer is liable to the same objection as the watch, and is in no respect superior. The reader, for these reasons, will not find any reference to the hearing power for the watch or audiometer in this paper.

I have abridged the notes of the cases as much as possible, so as to give due prominence to the essential points.

CASE II.—Jane W., aged eighteen, consulted me on the 18th August, 1879. She stated that she had been more or less deaf for nine years. Hearing distance—R., 3 feet; L., 3 feet. Has had a drumming noise from time to time. R. membrane generally depressed; L., deep funnel-shaped depression in front of and below tip of handle of malleus, also a little depression behind handle. Insufflated; air passes easily. Hearing distance—R., 3 feet; L., 5 feet. Applied collodion on both membranes.

August 22nd.—R., 5 feet; L., 8 feet.

26th.—R., 9 feet; L., 4 feet. R. membrane seems pretty normal in curve; L., still depressed.

September 1.—Insufflated. R., 7 feet; L., 11 feet.

8th.—Insufflated. Hears 15 feet, but not noted whether with one or both ears.

In this case insufflation was so much used it would not be easy to apportion the relative influence of the treatment by collodion.

CASE III.—Henry M., of Belfast, aged fifteen, consulted me on the 19th August, 1879. He stated he had been deaf about three years. I found some cerumen and scales in right ear, and a perforation of the membrane of the left. I removed the cerumen and scales from the right ear.

August 25th.—I have treated him since the 19th by insufflation with little improvement. He hears only  $1\frac{1}{2}$  feet with right ear. The air in passing into the drum makes a loud gurgling and, at times, a musical sound, and also causes free movement of the membrane. R. hears 2 feet. The membrane was so altered in appearance after the removal of the wax and scales on the 19th that I did not make any notes then as to condition of tension. I find now depressions and wrinkles on anterior part of membrane, and that the membrane is red. Applied collodion on R. membrane. Hearing distance, 6 feet.

26th.—Hearing distance, 10 feet.

He visited me several times afterwards. The hearing became much better, but I did not note exact hearing distance.

CASE IV.—Charlotte W., aged nineteen, married woman, applied to me on 22nd August, 1879. She stated that her deafness began two years ago, and that it had been getting gradually worse; that she had had no pain; that she suffered from noise in the ears and a feeling of weight. Hearing distance—R., 1 foot; L., 1 foot.

*State of the Membranes.*—R. Regular depression before and behind handle; triangle of Wilde blurred; no vascularity; considerably whiteness both in front and behind tip of handle. L. Depression more marked than in right; triangle of Wilde almost linear; same whiteness about tip of handle as in R. ear.

Insufflation: a distant flapping of left membrane; air goes into right drum, but causes no flapping. Hearing distance—no improvement.

On inspection of membranes afterwards I was surprised to find that the handle of the malleus on each side seemed more steeply inclined inwards. As it is sometimes rather difficult to estimate fairly degrees of depression, and so much at times depends on the illumination, I at first thought the appearance was illusory. However, I came to the conclusion that I had correctly interpreted the appearance, that the handle or membrane adjacent was attached to the inner wall, and that the main force of the



impact of the insufflated air had perhaps bulged out the membrane above, and thus caused the lower part to appear more depressed. The want of improvement in the hearing, notwithstanding free entrance of air, pointed in the same direction. Applied collodion on both membranes. In the right ear the handle has been pulled out considerably, and just at the tip there is a deep depression of the membrane, of an hour-glass shape. Hearing distance—R. and L., each 3 feet. Insufflated; no further improvement.

September 1st.—R., 4 feet; L., 6 feet.

2nd.—Applied more collodion on R. membrane.

5th.—R., 6 feet; L., 10 feet.

CASE V.—Eliza J. H., of Belfast, aged twenty-seven, applied to me on the 30th December, 1879. She stated that she had been deaf since the winter of 1878. She feels as if her ears were stopped, and at times as if her head were in a vice; is much troubled with a singing noise. Hearing distance—R., 9 feet; L., 6 feet. Both membranes much depressed. Catarrh of pharynx. Insufflated; air passed into both ears, at first not well, but ultimately freely. No visible change in membranes, except in the posterior segments, which became somewhat elevated. Handle in either ear does not move on inflation by Valsalva's method. Hearing distance improved to 11 feet for right, 8 feet for left. Applied collodion.

December 31st.—Has very little noise now, and no feeling of pressure. Right ear is now in her opinion quite well. Hearing distance—R., 15 feet; L., 12 feet.

January 1st., 1880.—R., 19 feet; L., 16 feet.

CASE VI.—Robert M., of Belfast, aged eleven, applied to me on the 9th February, 1880; stated that when three years old he was nearly drowned, and that he had been deaf, more or less, ever since. Hearing distance—R., 3 feet; L., 3 feet. Membranes much depressed, particularly in anterior segment. Insufflated repeatedly; air passed with difficulty. Hearing distance—R., 15 feet; L., 3 feet. Applied glycerine and iron to Eustachian tube.

Feb. 11th.—R., 4 feet; L., 1 foot. Applied collodion.

26th.—R., 8 feet; L., 2 feet. Applied collodion again.

27th.—R., 10 feet; L., 5 feet. Applied collodion again. R. and L., each 13 feet.

CASE VII.—Joseph J., aged nine years, applied to me on the 5th March, 1880. Has been deaf for a considerable time of both ears. Found some cerumen and scales firmly impacted in both ears, but after the removal of these he still continued very deaf. Insufflation improved the hearing of both ears, but particularly of the left.

*State of Right Membrane.*—Membrane, posterior to handle of malleus, depressed, and touching ossicles. A very deep depression below and behind tip of handle, with sharp margin. The upper margin of the deep depression was formed by a whitish body, evidently the incus, against which the membrane was pressed. Could only hear a moderate voice at 2 to 3 feet. On insufflation the deep depression became a well-defined bulging, just like a little ball, and the part of the membrane lying upon the ossicles was also elevated. From the 5th till the 18th March I treated him by insufflation, just to see exactly whether any change might take place so as to be able to have a crucial test of the value of the collodion. The insufflation improved his hearing to 6 feet, but this improvement only lasted about an hour. On examining him a short time after insufflation it was found that the membrane had collapsed again.

March 18th.—Poured collodion on lower part of membrane.

19th.—Hears moderately-toned voice at 7 feet; depression considerably reduced. The collodion, in fact, kept his hearing distance steady at the best point to which he attained after insufflation; still the contractile power was not sufficient to brace up a membrane so greatly relaxed.

22nd.—Applied more collodion on the part by cotton wool on probe, then quickly placed a little piece of brown paper over the depressed part, and insufflated so as to force out the membrane against the paper.

23rd.—Hears moderate voice at 10 feet; paper adhering well.

May 13th.—The paper has lost its attachment to membrane. The membrane is not now depressed on the ossicles, and the deep depression is greatly reduced. Applied collodion freely by means of cotton wool on probe.

14th.—Scarcely a trace of depression. Hears well.

CASE VIII.—Lizzie G., of Belfast, aged sixteen, consulted me on the 17th March, 1880. She stated that she had been deaf for a long time, but worse than usual within the last week. Hearing distance—R. and L., each 1 foot. Membranes deeply depressed; anterior and lower parts of membranes much extended; handle of malleus in each ear seems very short, and inclined greatly backwards. Insufflation caused air to enter the drums, and improved the hearing to 3 feet.

March 18th.—Reports that she is not better, and I found her hearing distance had receded to one foot. Applied collodion on both membranes.

19th.—States that the application improved her hearing much. Hearing distance—R. and L., each 5 feet.

June 25th.—Hearing distance—R., 3 feet; L., 8 feet.

CASE IX.—Mary T., aged twenty, millworker, consulted me on the 7th April, 1880. She stated that she had been deaf of both ears for three months, but that she had been previously deaf from time to time. Hearing distance—R., 3 feet; L., 2 feet.

*State of Membranes.*—R. membrane much depressed; anterior segment much extended; L., perforation. Insufflated air passed into R. drum, but no improvement in hearing resulted. I found superficial ulceration over tonsils. Applied collodion on right membrane.

April 12th.—Hearing distance improved to 12 feet. Prescribed iodide of potassium for the throat disease, which I regarded as the result of inherited syphilis.

Sept. 18th.—Hearing distance still 12 feet. The ulceration has committed considerable ravages in the throat. There has been extensive cicatrisation of palate to posterior wall of pharynx.

CASE X.—Mary S., of Belfast, aged twenty-two, servant, applied to me on the 14th April, 1880. She stated that her ears had been affected in a variable degree since early childhood; that she had been very deaf for the greater part of the winter, and troubled with crackling, bell-ringing, and singing noises constantly; she feels a great weight in the left ear, and a pain as if the bones were being crushed. Hearing distance—R., 3 feet; L., 1 foot. I found both membranes opaque, grayish white, without a remnant of the triangle of Wilde, and the conical depression of drum greatly exaggerated. Insufflated. The sound heard in the left ear is distant; that in the right ear is distinctly that of the membrane moving. Hearing distance—R., 10 feet; L., 2 feet. Insufflated again with vapour of chloroform, when I found it passed well into the left ear. Hearing distance—R., 14 feet; L., 4 feet. Says she has a drumming sound in both ears, but has not the same feeling of weight. Applied collodion on both membranes. Hearing distance—R., a low-toned voice at 17 feet. L., the same as before. States that she has experienced great relief from the application. The drumming has ceased. She continued to improve.

CASE XI.—Allen L., of Belfast, aged twelve, consulted me on the 20th April, 1880. He stated that his right ear had been deaf for a long time. Hearing distance, 3 feet. The membrane looked rather large, as if generally extended. Insufflation caused air to enter readily, but effected no improvement in the hearing. The sound was that of a lax, freely-moving membrane. Applied collodion.

5th May.—Hearing distance, 9 feet. Applied collodion again.

6th.—Hearing distance, 14 feet. He stated that he felt better immediately after the application.

CASE XII.—Lizzie J. S., of Belfast, aged nine, consulted me on the 13th September, 1880. She has heard badly for three or four years, but hearing was very variable. Heard a moderate voice with each ear at 2 feet. Left membrane greatly enlarged in area; posterior fold running from short process very prominent; triangle of Wilde very small; pos-

terior segment of membrane touching incus. Right membrane moderately depressed. Insufflated. Depression of left ear has become a bulging outwards, thus proving the absence of adhesions. Hears with right 9 feet, with left 6 feet.

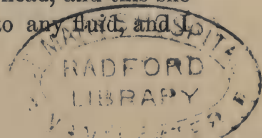
14th.—The left membrane again collapsed, but still she hears 6 feet. Applied collodion on left membrane freely; afterwards, hears 9 feet.

16th.—The depressed part is considerably elevated and lifted from the incus. Hears 11 feet. Applied more collodion.

17th.—Hears 13 feet. I do not refer to right ear, as it was not treated by collodion.

CASE XIII.—Alex. R., aged twenty, labourer, consulted me on the 28th September, 1880. He stated that he had been deaf of the right ear for three years, that his hearing was extremely variable, that he had a singing noise in the ear from time to time, and that at times—particularly after sneezing—he experienced a trembling sensation in the ear. He heard a moderate voice at 2 feet. I found the membrane much depressed and lengthened in its lower and anterior segment and the handle greatly inclined backwards, and the short process prominent; promontory shines through membrane, showing proximity to inner wall of tympanic cavity. Insufflation, which showed the Eustachian tube free, gave the impression of the impact of air on a small tense membrane, and did not at all change the whitish reflex of the promontory. I concluded there was an adhesion or band, which prevented the membrane moving as a whole. Applied collodion. So soon as it dried I found the hearing improved from 2 to 10 feet. I have not seen the patient since.

CASE XIV.—The following case illustrates the application of collodion to a depressed perforated membrane:—Elizabeth S., aged thirty-seven, consulted me on the 28th September for an acute inflammation of the left drum. She stated that she had been dull of hearing for a great many years, but for a week past she had had excruciating pain in the left ear. I found the parts greatly congested, and that she had a perforation, the exact seat of which I could not at first make out. By leeching, followed by injection of water from ear through the Eustachian tube, the inflammation was completely arrested. The condition of the membrane I then found as follows:—The handle of the malleus stood as a prominent ridge, apparently pretty nearly in normal position, whilst posterior part of membrane was depressed on incus, and anterior part was likewise much depressed as a whole, whilst above and anteriorly there was a still deeper depression simulating a perforation. I concluded the perforation was very small and quite at the anterior attachment of the membrane to the wall of the meatus. Has had a crackling, glugging sound in the left ear, which would come suddenly on movements of the head, and this she has had for a long time. It is evidently not owing to any fluid, and I





infer it is to be attributed to the movements of the relaxed membrane.  
Hears 3 feet.

November 3rd.—Painted collodion on membrane.

5th.—Crackling and glugging sounds are gone.

12th.—Hears 6 feet. States that for years she has not heard with the same steadiness—in fact, until now, she was never sure for a minute of her hearing.

December 10th.—Hears now 16 feet.

CASE XV.—Annie Georgina C., aged eleven years, consulted me on the 3rd November, 1880. She stated she had been deaf for several years. Heard a moderate voice at 2 feet with each ear. In right ear found some scales and cerumen, which I removed. There had been an otorrhœa of left ear for a long time, but to it I do not further refer. After the removal of the scales she heard 4 feet with the right ear, and, after insufflation, 8 feet. I found the membrane much depressed before insufflation.

November 4th.—Shortly after she left me yesterday the hearing became as bad as before. R. membrane depressed. Applied collodion.

5th.—R. hears 9 feet.

11th.—R. 14 feet.

December 10th.—Has continued to hear quite well.

As will be seen from the details of these cases, there can be no doubt whatever of the beneficial influence of the collodion. It is true that in several of them local applications to the mouth of the Eustachian tube and insufflation were at the same time used, and it may sometimes not be easy to apportion the relative share of the improvement to be attributed to each remedy; still, when we take into account that in all the cases great improvement resulted almost immediately after the collodion treatment, that when the insufflation treatment was nugatory the collodion was effectual, and that where insufflation brought about only a transitory amendment the collodion caused a durable one, we can hardly have any trouble in deciding that the collodion is extremely valuable, whether we regard it as a principal or auxiliary.

One of the most important points in relation to collodion is that it steadies the hearing. I remember well a young man, aged about twenty, a butler in an hotel, who applied to me about a year ago to relieve him of his unsteadiness of hearing. At times he could hear fairly, and at other times his hearing would greatly diminish without the slightest warning. He found this extremely annoying, and he ran daily risk of losing his employment. He

was constantly making mistakes in taking orders. By Valsalva's method, which he had learned to use, he could restore his hearing, but to this he could not resort when he most required to use it. The membranes being considerably relaxed I at once applied collodion, and from that time he was enabled to perform his duties quite satisfactorily.

I believe the application of collodion on the membrane has a marked influence on the patency of the Eustachian tube. It has often been remarked to me by patients that, after its application, they are much troubled with eructations, and that on each eructation the air rushes direct into the drum with considerable force, although they could not at all inflate the drum by Valsalva's method. I shall not offer any explanation of this phenomenon, but rest satisfied with stating what has been so often told me by perfectly trustworthy persons. If it be a fact—as I believe it to be—then the application of collodion on the membrane would not only be serviceable for the prevention of the in-pushing of the membrane, but likewise for its influence on the Eustachian tube.

Unfortunately in cases of extreme relaxation, particularly when accompanied by deep limited depressions, the contraction of the collodion is usually not sufficient to completely restore the tension. Although its power may be increased by reapplications, this is found to be only possible to a limited extent—for example, after repeated applications, layer upon layer, it will be found that the edges of the coat may curl up, and that the whole may come off in the course of a few days. The best plan is, therefore, to apply as much as may be thought desirable at one sitting. In such case it may remain firmly attached for months. I have been in search of some more efficient contractile agent than collodion, but, so far, I have found nothing equal to it.

In Case VII., it may be remarked, I adopted an expedient to remedy more effectually a deep limited depression. I thought by applying a little piece of paper on the membrane, previously well coated with collodion, so that the paper should extend beyond the margin of the depression, and then insufflating so as to cause the depressed part to come in contact with the paper and adhere to it, I would put the depressed part in the best possible condition for recovering its lost tone. In this case it answered fairly well, but still it is a difficult procedure, and one requiring to be executed quickly. I have hopes, however, of yet finding better agents than paper and collodion.

TABLE giving a Bird's-eye View of the Cases here noted.

No. of Case	Age of Patient	Duration of Deafness	Right or Left Ear	State of Membrane	Hearing distance for a moderately-toned Voice	
					Before treatment	After treatment
1	41	3 years	L.	A number of non-adherent depressions between upper part of handle of malleus and posterior wall of meatus	3 feet	18 feet
2	18	9 years	R. } L. }	Generally depressed Deep funnel-shaped depression in front of handle; small one behind	3 feet 3 feet	15 feet
3	15	3 years	R.	Depressed and wrinkled in anterior part	2 feet	10 feet
4	19	2 years	R.	Depression before and behind handle, adhesion to promontory	1 foot	6 feet
			L.	Depressions more marked than in right	1 foot	10 feet
5	27	1 year	R. } L. }	Much depressed	9 feet 6 feet	19 feet 16 feet
6	11	8 years	R. } L. }	Much depressed, particularly in anterior segments	3 feet 3 feet	13 feet 13 feet
7	9	A considerable time	R.	Posterior part of membrane touching incus; a deep depression below and behind tip of handle	3 feet	10 feet
8	16	A long time	R. } L. }	Deeply depressed; anterior and inferior parts of membranes much extended	1 foot 1 foot	3 feet 8 feet
9	20	3 months	R.	Depressed; anterior segment much extended	3 feet	12 feet
10	22	Since early childhood	R. } L. }	Depressed	3 feet 1 foot	17 feet 4 feet was the distance last noted, but she improved much more
11	12	A long time	R.	Depressed and extended	3 feet	14 feet
12	9	3 or 4 years	L.	Greatly extended in area; posterior segment of membrane touching incus	2 feet	13 feet
13	20	3 years	R.	Greatly depressed and extended in anterior and inferior segments—with adhesion probably	2 feet	10 feet
14	37	Many years	L.	Small perforations; posterior part of membrane depressed on incus; anterior part of membrane much depressed	3 feet	16 feet
15	11	Several years	R.	Depressed	4 feet	14 feet



I shall summarise now the conclusions at which I have arrived regarding the treatment of relaxed membrane by collodion:—

1. It is the only plan of treatment of any value yet brought before the profession.

2. In the majority of cases it effects an immediate improvement of the hearing, and a diminution of the unpleasant symptoms of noise, &c.

3. It is an important auxiliary to treatment, and shortens its duration.

4. It diminishes the unsteadiness of the hearing.

5. By the long-continued bracing-up of the relaxed membrane it tends to bring about a permanent improvement in the tension.

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ART. III.—*Enteric Fever and its Modifications by Malaria in South-eastern Africa.*<sup>a</sup> By SURGEON-MAJOR R. W. JACKSON, C.B., A.M.D., Royal Infirmary, Phoenix Park, Dublin.

IN May, 1879, I had the honour to read a paper on some cases of fever I had seen and treated near Nicosia, soon after the occupation of Cyprus by the British, and as I served in South Africa during the latter part of the late Zulu war, and subsequently with the force in the short campaign against Sekukuni, I trust that a few remarks on the nature of the fever met with in South-eastern Africa may prove interesting.

Immediately on landing at Durban, in Natal, it was obvious that a difference of opinion existed between the medical officers in the field and those at the base hospital regarding the fever—the former, watching the ranges of temperature indicative, in most cases, of the remittent type, were in favour of a malarial form, while the termination of the cases and subsequent *post mortem* examination demonstrated the presence of enteric lesion, and caused the medical officers at the base to pronounce the fever typhoid. In one instance at Ulundi I was present when a very animated discussion took place on the question. Although a specimen of an ulcerated ileum was shown, those in favour of the malarious type contended that the case could not be enteric on account of the ranges of temperature recorded. Although some cases of fever occurred among the small force attached to head-quarters as an escort, men had to be transferred to station or field hospitals in consequence of the

<sup>a</sup> Read before the Medical Society of the King and Queen's College of Physicians, Wednesday, December 1, 1880. [For the discussion on this paper see page 66.]

frequent moves, and there was no opportunity for the medical officer in charge to record the course of the disease. During the Sekukuni campaign the head-quarters and Baker Russell's column were encamped for about three weeks on the Paquani Hills, about six miles from Fort Weeber; several cases were sent to hospital from the camp, also some from the company of 21st Fusiliers attached to head-quarters. Two of the 21st—Privates O'Loughlen and Morton—while attending previous to transfer to hospital, had at first temperatures, with other symptoms, indicative of enteric; in thirty-six hours after the accession the temperature became normal, although the furred tongue, thirst, and lassitude continued. The day following the temperature again rose, and the men were sent to Fort Weeber, and I was informed by Surgeon Branagan that the cases were undoubtedly enteric; he observed the same features in the early stage of cases of enteric. As an example of malarial, I will give a few notes on a case which occurred on the return march after the capture of Sekukuni's stronghold:—

CASE I.—Private Hampton, 21st Fusiliers, aged twenty-two, employed as groom to Sir Garnet Wolseley, was attacked on the line of march, December 8th, with colic, pains in the belly, and diarrhœa, to the extent of eight watery stools within a couple of hours. Brown tongue; pulse at breakfast-time, 96; temperature, 99°. When we halted in the evening, pulse, 96; temperature, 103·5°. On the next morning his pulse was still 96; temperature, 102·2°. He was sent to the station hospital, Pretoria, on arrival, about mid-day. Owing to the courtesy of Surgeon-Major Jennings, I have obtained a chart of Private Hampton's temperature during his illness; and it affords a good specimen of the ordinary range of a mild case of remittent. I would also call attention to the singular feature in the commencement of this case that the range of pulse did not present the rise to correspond with the marked alteration of temperature in the observations taken on the 8th and 9th December—in fact, judging from the character of the pulse, one would have been more inclined to anticipate enteric than malarial. The normal range of temperature in this attack was not reached until the 31st (twenty-four days); a slight recurrence took place eight days after.

After the head-quarters arrived at Pretoria, as the medical duties connected with the charge of the staff were very light, and but two medical officers doing duty with the troops, I offered my services to assist in the hospital; and through the kindness of Surgeon-Major Jennings, A.M.D., who was then senior medical officer at Pretoria, I had an opportunity of attending and observing several

cases of fever in the station hospital. Some were of a very severe type, and presented features which I had never previously seen. An inspection of the charts at once strikes one as to the temperature being widely different from the range of the continued fevers met with in Europe.

CASE II.—The first I will submit is that of Private W. Lovell, A.H.C., aged twenty-six; service, six years. Had volunteered from the 100th Regiment, having been passed by me as a recruit when that corps was at Manchester. This man had been in hospital since 16th December. Attack commenced on the way back from the Sekukuni campaign. He first had diarrhoea, which lasted six days. During the early stages of disease there were regular morning remissions, but after the 8th January these became irregular. There was also bronchial irritation and cough. Spots of roseola were found on chest and back; tenderness over abdomen. The stools varied much—at times brown and watery, occasionally of the pea-soup appearance, while on the 2nd January he passed a natural solid evacuation. There was marked exacerbation on 8th January, when head symptoms became intense, while the bronchitis decreased; delirium at the same time supervened; the emaciation and debility also gradually increased. On the 15th, before my departure from Pretoria, there was low muttering delirium, excretions passed in bed, could scarcely speak, and weakness extreme. He died on 18th January, 1880. The remark on “Weekly State” was that the *post mortem* examination showed characteristic intestinal lesions.

On contrasting the charts of the cases now detailed (Hampton's and Lovell's), the presence of some modifying cause in the progress of Lovell's disease might be predicated. From the evening of 27th December to the following morning a fall of nearly six degrees took place. This is a very unusual feature in enteric, except when hæmorrhage from intestines might occur, and is in this instance due, in my opinion, to the malarial complication. It was strange also how the motions varied in colour, shape, and consistence, as the enteric or malarial element appeared to be for the time in the ascendant. Quinine was used freely in this case on the 8th of January, to the extent of 40 grains, without producing any obvious effect.

CASE III.—The next is likewise a very severe and fatal case of fever. Private J. M'Kenna, 2nd battalion 21st Regiment, age twenty-one; service one year. December 29th, 1879. Has been in hospital since 26th inst. Attack commenced at Fort Weeber. Was in hospital there for a few days, then accompanied the regiment to Sekukuni town;



returned to Pretoria on 20th. Early in the case the head symptoms became very severe with delirium, the temperature gradually increasing from 3rd January. On 14th mucous râles were present over right lung, and on following day extensive pleurisy was detected on left side of chest. When I left Pretoria on 15th his temperature was  $103^{\circ}5$ ; pulse so rapid that it could not be counted, and respiration 36. The bowels, as a rule, were costive during his illness, and, after mild laxatives, presented no appearance like enteric stools. On the 7th, when the temperature was very high, 45 grs. of quinine were given, without reducing the heat; blisters to back of head and bromide of potassium were also used. I would ask attention in this case to the marked slowness of pulse, unaffected by the oscillations of temperature, the correlation apparently not obtaining until the 10th January and succeeding days. I regret that the *post mortem* report, as in Lovell's case, merely amounts to the notice that characteristic lesions existed.

CASE IV.—Private Selwood, 2nd battalion 21st Regiment, age twenty-three; service, six years. January 3, 1880.—Has been in hospital since 29th of last month, soon after his return from Sekukuni campaign. The enteric symptoms were from the first complicated with marked bronchial and pulmonic inflammation. On the 2nd January spots were seen on chest. The temperature, which had been inordinately high from admission until 9th January, on which day it reached within a fraction of  $106^{\circ}$ , on the following morning it fell to  $100^{\circ}8$ , and again on morning of 11th to  $96^{\circ}8$ —that is exactly nine degrees in thirty-six hours; during the succeeding thirty-six hours it rose again to  $104^{\circ}2$ , while the pulse did not vary to anything like a corresponding degree, nor did the state of lung sympathise with the extraordinary variations of heat. When I left Pretoria his temperature was  $100^{\circ}$ . The bowels in this case were not much affected, but the motions had a decidedly enteric appearance. I find that Selwood had large doses of quinine on 9th. However, I should hesitate before I formed an opinion that the great decrease of temperature was more than a coincidence. On the morning of 10th January, with a temperature of  $100^{\circ}8$ , the pulse was 96, and on next morning, with  $96^{\circ}8$ , the pulse is but four beats less, thus showing a variation of but one beat for every degree of temperature. I regret to say I cannot follow this case.

As a contrast to the type of typhoid with remittent complications, two cases are submitted—one a case of fever treated in Cyprus, and the other that of Veterinary-Surgeon R. Moore, King's Dragoon Guards. In these the ranges of temperature are found to present a uniform character as regards the evening rise and morning fall. The South African remittent fever *per se* was of a milder type, as a

rule, than the disease met with in Cyprus, which in some instances presented the pernicious form. In Mr. Moore's case the symptoms chiefly requiring notice were—bronchitis, wandering pains, epistaxis on one occasion, and profuse sweats.

That the malarial taint clings to the system for years, merely waiting an opportunity to show itself when its victim is suffering from any cause of debility, was well exemplified in a case which occurred in Beggar's-bush Barracks recently, in which I had the benefit of Dr. Hayden's advice:—

CASE V.—Captain F. was attacked with severe hæmoptysis on 10th September. There was evidence of some consolidation near the apex of right lung, with surrounding area of dulness from congestion, as the sequel proved. He lost about 18 oz. of blood the first twenty-four hours, and subsequently a considerable quantity, until arrested by a hypodermic injection of atropia, given on Dr. Hayden's recommendation. While the local symptoms were improving an accession of fever came on, in which the range of temperature and general symptoms were more characteristic of remittent than any form of hectic or irritative fever; the chart defines this more clearly than any description. It appeared that he had a slight attack of fever at Hydrabad, in Scinde, in 1875, and both Dr. Hayden and I were of opinion that the fever was an intercurrent attack of malarial fever. He had quinine and arsenic. I heard lately from him. He is spending the winter at Hyères, and is going on favourably.

From what I have seen of the disease termed typho-malarial, I am inclined to believe that the two elements do not intimately mingle in the course of the disease; the malarial appears to be more or less parasitical in many cases, with a decided tendency to seize on a subject debilitated by any cause, physical or moral. In the few cases I now submit, the explosive periods of the remittent form a marked contrast to the smouldering progress of the enteric.

As regards the causation of enteric in South Africa, I have little doubt that in that region, as in more populous countries, water is the great agent in diffusing the contagion. Good water is seldom found as one travels over the vast expanse, and even in the towns, both large and small, very little precaution is taken to preserve the purity of the streams which, in channels on the surface, supply drinking water for the inhabitants.

In a lecture given by the late Dr. Lyle, Superintendent of Education, at Pretoria, in 1878, he drew attention to the serious danger likely to result from the carelessness of the people, both

with regard to the open state of the conduits and the flooding of the land near the town, foretelling the likelihood that fevers, both typhoid and malarial, would be a consequence. During my short stay in the capital of the Transvaal I met with cases among the inhabitants which fully confirmed his prediction. As it obviously bore more or less directly on the health of the human race, I was most anxious to make inquiry as to the nature of the diseases of animals in South Africa, particularly that affection among the horses called rather vaguely horse sickness; and Mr. Moore, Veterinary Surgeon of King's Dragoon Guards, was so good as to allow me to assist at the examination of the animals both during their illness and after death.

Almost the first animal examined—a charger of Colonel M'Calmont, A.D.C. to the General—presented appearances which were strongly suggestive of enteric fever, the small intestine for about two feet from the cæcum being of a deep claret colour, while the interior of the bowel appeared succulent, and here and there the small vessels were bright, red, and arborescent. Although no ulceration was detected, there was frequently found a croupous or rather a diphtheritic exudation on the mucous membrane, gray-coloured and easily scraped off the surface. Were the disease allowed to run its course, and were the fatal termination not hastened by exercise or exposure, it is a question whether ulcers would not be found. The immediate cause of death was congestive bronchitis.

This examination took place on 12th November, 1879. We subsequently examined many animals, and in most instances the result was similar. A pamphlet on this subject was published by us at Pretoria. In some instances a variation between the morning and evening temperature was found to exist, like what obtains in the affection in the human subject. It even seemed as if the horse was susceptible to the malarial influence, inasmuch as it was difficult to account for the rapid fall met with in some cases on any other theory. The evacuations from the animal also bear some analogy to the pea-soup discharges from the enteric patient. Veterinary surgeons in Africa state that the disease attacks various animals, as the mule, zebra, wildebeeste; dogs are also liable to it. Surgeon Saunders informed me he examined a dog which died in the house in which he lived at Pietermaritzburg, and found well-marked enteric ulcers. I was desirous to watch the progress of the disease in a dog belonging to a lady in Pietermaritzburg, wife to an officer of the garrison, and offered my services, hoping to

get a chart of the dog's diurnal ranges, but some mutual friend had told the lady that if I attended her pet I would probably make a *post mortem* examination. Consequently she declined my offer. The dog, however, recovered; he was a Scotch terrier, and took kindly to milk and whisky, which were about the best remedies in the case.



#### CALCIUM SALICYLATE IN THE SEROUS DIARRHŒAS OF INFANTS.

DR. ALEXANDER HUTCHINS recently read a paper before the Medical Society of King's County, on the treatment of serous diarrhœas of infants by calcium salicylate. In all cases the dose was three to five grains every two or four hours. The total quantity consumed by each patient varied between six and eighteen powders. In a few cases minute doses of aconite and veratrum were given during the persistence of high temperature, and in a few others small doses of quinine were given after the subsidence of the disease. The calcium salt had no appreciable effect on any one of the other forms of intestinal flux, whether lenteric or inflammatory, the serous diarrhœa alone seeming to be amenable to the drug. Each of the other forms required special treatment. An additional fact was noted—that the vomiting accompanying these diarrhœas was controlled as soon as the medicine began to show its effect on the discharges. Certainly, without exception, the stomach tolerated the presence of the drug. The drug is prepared by mixing 276 parts by weight of the acid with 100 of prepared chalk, which will form 314 parts of the anhydrous salt, or, what is sufficiently correct, eleven of the acid to four of chalk, making about twelve and a half of the salicylate of calcium. It is given in syrup, or rubbed up in sugar and moistened with water to a sufficient extent.—*N. Y. Med. Record*, Oct. 30, 1880.

#### LESIONS OF COSTAL CARTILAGES AND RIBS IN CONSUMPTION.

To determine the cause of the severe pain phthisical patients complain so much of during the last stages of the disease in the region of the ensiform cartilage, Dr. Kostiuurin made microscopic examination of this and adjoining parts. He found the periosteum and perichondrium thickened, and their vascular supply increased. Cartilages were in a state of inflammation, softening, and fatty degeneration. Tubercles were found in the marrow of the ribs. Muscular fibres of the diaphragmatic attachment to these parts were opaque and granular. These lesions determine a decrease of elasticity of the thorax, and, consequently, a diminished gaseous exchange in the lungs.—*Vratch*, 1880, No. 5, and *N. Y. Med. Record*, Oct. 30, 1880.



## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*Lectures on Digestion: an Introduction to the Clinical Study of Diseases of the Digestive Organs.* By DR. C. A. EWALD. Translated by ROBERT SAUNDBY, M.D., Edin. London: Williams & Norgate. 1880. Pp. 149.

It is with much pleasure we welcome a translation of Dr. Ewald's interesting and attractive lectures on digestion. It is true that in them the professed physiologist will not find much that is new, but the medical practitioner who has not been able to keep on a level with the rapid advance which physiological knowledge has made in recent times, will here get in a short compass a very admirable *résumé* of the more important recent discoveries, and find these set forth with a constant regard to their usefulness in practice. Dr. Ewald is one of the few who combine medical practice with experimental investigations in physiology and pathology, and his statements have the authority derived from his having seen with his eyes and handled with his hands the things of which he speaks. In not a few instances his own investigations lead him to differ from current opinions; this he does always with modesty and judgment.

The first two lectures are taken up with a consideration of ferments and their modes of action inside and without the body. The author professes himself a disciple of Pasteur, and rejects the theory of *generatio equivoca*. At the end of the second lecture the more important physiological fermentation processes are given, expressed in equations.

Lectures III. and IV. deal with the saliva. The facts concerning the secretion of the salivary glands are better known than those connected with any other secretion; hence much of what is known for the salivary glands is assumed to be true of the other secreting organs, and on this account the saliva is studied at greater length than is the case with the other secretions. As regards the well-known changes which occur during secretion in the histological structure of the mucous glands, Dr. Ewald holds, although doubt-

fully, to the view which he put forward some years ago—namely, that the change of the secreting cells is due merely to an abstraction of mucus, and that there is not, as supposed by Heidenhain, a destruction of cells in secretion, and a regeneration of these from the granular cells forming the crescent of Giannuzzi. As regards the sulphocyanide of potassium, whose presence in the saliva has given rise to so much controversy, we are told that it obviously arises as a decomposition product in the cavity of the mouth—perhaps being derived from urea and sulphate of potash. This statement we believe to be erroneous.

In the fifth, sixth, and seventh lectures stomach digestion is treated of. In the account of the histology of the glands of the gastric mucosa we find *Belegzellen* translated “pavement cells.” This we think a rather unfortunate translation. The cells in question get their name because they are covered by the *Hauptzellen* (fundamental cells of Dr. Saundby), and they do not at all resemble a pavement, being oval, granular, and not in contact one with another. “Parietal cells,” the term employed by Dr. Klein in his Atlas, is, to our mind, a much better name for them. Dr. Ewald points out the very important fact that at a certain stage of digestion the two kinds of cells come to resemble each other so closely that it is difficult to distinguish them from one another.

Regarding the dispute (now a matter of history) as to the nature of the acid of the gastric juice, we are told that twelve authors have pleaded for lactic acid, fourteen for hydrochloric acid, and two for phosphoric acid. Richet’s theory, that the hydrochloric acid exists in combination with leucin, is rightly considered as more than doubtful. In describing Maly’s ingenious theory in explanation of the separation of a mineral acid from the alkaline blood, we find a misprint in the original reproduced in the translation. In the equation on page 51, on the right side,  $\text{Ca}_3\text{PO}_4$  should be  $\text{Ca}_3(\text{PO}_4)_2$ .

When speaking of fermentation in the stomach Dr. Ewald alludes to the objections raised by Hoppe-Seyler to the analysis of the stomach gases of the patient of Ewald and Rupstein, whose case was recorded some time ago, and who has since died of carcinoma pylori. Here the gas expelled by eructation was inflammable, and consisted largely of marsh gas. Hoppe-Seyler thinks this was not developed in the stomach but in the intestine, and merely regurgitated into the stomach. Dr. Ewald doubts the validity of the objection, but does not discuss the grounds on which it was

formed—namely, that  $\text{CH}_4$  is not formed in putrefactive processes until all the free oxygen has been consumed, whereas in Ewald's case as much as 11.91 volumes per cent. of free oxygen was found.

In Chapter VII., and again in the appendix, we find an account of the experiments in which the author and Koch attempted to produce gastric ulcers by reducing the blood-pressure by hæmorrhage or by section of the spinal cord. By the second method some success was obtained.

Throughout the lectures we find some very judicious observations on the administration in medicine of the digestive ferments which are so much in favour at present. The author agrees with Hoppe-Seyler, and our own observations entirely concur with his, that in ordinary cases of dyspepsia it is not the pepsin but the acid which is wanting, and that the instances in which pepsin is indicated are those where the amount of mucous membrane is diminished relatively to the quantity of food it is called on to digest—as in cases where a part of the mucosa is destroyed by a carcinoma, leaving the remainder sound, or where the stomach is distended and the glands not increased in number, but merely more widely separated one from the other.

Lecture VIII. treats of the bile. The most important observation here is that in animals killed during digestion the contents of the duodenum, even beyond the opening of the bile duct, are acid, and show no evidence of precipitation of albumen. Such precipitate, even if it is formed by the action of the bile, must be immediately redissolved by the pancreatic juice.

The ninth lecture deals with the pancreas, and the tenth with the secretions and movements of the intestines. The author has found enemata of cold water very useful in the diarrhœa of children; the cold checks, as he thinks, the unduly active peristalsis.

The eleventh lecture is on absorption from the intestine, and the twelfth and last on the changes undergone by the different articles of food in digestion, and on some general points in the theory of dietetics.

In an appendix we find some interesting matter, particularly a notice of further experiments on the resistance offered by ferments to an elevated temperature, which does not seem to be so great as is stated in the text, and investigations on the activity of several commercial preparations of the digestive ferments. These are nearly all, however, German preparations, and have not much interest for us in this country. Dr. Ewald states most empha-

tically his opinion as to the utter uselessness of administering pancreatic ferment by the mouth, its efficacy being destroyed by contact with the gastric juice.

As to the translation of this work it is on the whole good. There are, however, some errors. Some of these are evidently mere slips, as where on p. 22 the second class of ferment decompositions is said to be characterised by the passage of oxygen from the hydrogen to the *carbonic acid* atom, instead of to the *carbon* atom. In many places, from a bad choice of words and a clumsy construction of the sentences, the sense is obscure, and the translation contrasts unfavourably with the singularly lucid and agreeable style in which the original is written, while in some passages the translation is simply wrong and fails altogether to give the author's meaning. As examples we may cite the passage on p. 54, where the preparation of a glycerine extract of the stomach for medicinal purposes is described. "Es dauert indess einige Tage, bis das Glycerinextract wirksam ist," is translated "It remains in this a day until the glycerine extract is active." Immediately after "unangenehm" is translated unexpected, and in the next page we find the statement that with peptone the xanthoproteic reaction and Millon's reagent give no results, while every tyro in chemistry knows that this is not the case; and in the original the passage runs "Die Xanthoproteinreaction und die Reaction von Millon fallen positiv aus." On p. 81, in discussing Kühne's theory of proteid digestion by trypsin, the process is said to consist of two stages. "In the first the albumen is converted into peptone, in the second one half of the peptone, which he terms 'hemipeptone,' is further decomposed *in a similar way*, while the other remains as 'antipeptone,' which undergoes no further change." The words which we have given in italics make nonsense of the whole passage, and are a translation of "*in einer gleich zu besprechenden Weise*," which means "in a manner to be immediately described"—that is, to undergo further decomposition into leucin, tyrosin, aspartic acid, &c., &c.

We had marked other passages where, on comparison with the original, we had found the rendering defective, but those we have given will suffice. Still, on the whole, the translation is not bad, and less clumsy than translations from the German usually are; and remembering what drudgery the translator's work is, we cordially thank Dr. Saundby for making a valuable addition to medical literature accessible to English readers.



## RECENT WORKS ON MATERIA MEDICA.

1. *Note-Book of Materia Medica, Pharmacology, and Therapeutics.* By R. E. SCORESBY-JACKSON, M.D., &c. Fourth Edition, revised and brought down to the present date, by DR. FRANCIS W. MOINET, F.R.S.E., &c. Edinburgh: Maclachan & Stewart. 1880. Pp. 470.
2. *Conspectus of Organic Materia Medica and Pharmacal Botany.* By L. E. SAYRE, Ph.G. Detroit: George S. Davis. 1880. Pp. 220.
3. *Aids to the Chemistry and Tests of the Pharmacopœia.* By JAMES DAVISON, L.R.C.S.I., L.K.Q.C.P.I., &c. Dublin: Fannin & Co. 1880. Pp. 56.

1. SCORESBY-JACKSON'S "Note-Book of Materia Medica" has always deservedly been a favourite with students. Since its first publication in 1866, a second and a third edition have passed through the press, and a fourth edition has now been issued. In former editions the original plan of the work, in accordance with the wishes of the relatives of Dr. Scoresby-Jackson, was strictly adhered to. It is much to be regretted, we think, that this has not been done by the editor of the present edition. A characteristic feature of the work was the exposition of the *rationale* of the various steps in the preparation of the different inorganic and organic articles of the Pharmacopœia, and the explanation of the purity and other tests of these preparations as given in that volume. All this, and much more besides, has been removed from the last edition, which consequently, to our mind, is greatly inferior to its immediate predecessor.

Although there are a larger number of pages in the fourth edition than in the third, this has been effected by the use of a uniform large size of type throughout the book, and not by the addition to it—except to an utterly insignificant extent—of any of those additions to the science of therapeutics which, as the editor states, have been made since the date of the last edition (1874). The judicious use of a skilled editorial pruning hook, with the grafting in of compensatory insertions, might have improved the original stock; but the severe pruning the work has sustained at the hands of Dr. Moinet has damaged what was a really good book.

2. As far as organic *materia medica* alone is concerned, Mr. Sayre's "Conspectus" is an American work similar in scope to, but not so comprehensive as, Dr. Duffey's edition of Griffith's "*Materia Medica and Pharmacy*." Both works treat mainly of the physical characteristics and qualities of drugs apart from their therapeutic uses. Mr. Sayre in addition devotes especial attention to pharmacal botany; and besides a chart of botanic *materia medica*—exhibiting the natural orders, officinal, botanical and common names of each drug, as well as their habitat, the part used, constituents, medical properties and officinal preparations—he also gives a remarkably good synopsis of structural botany and of the classification of plants.

In his description of vegetable drugs, Mr. Sayre follows Prof. Maisch's arrangement. Thus, commencing with roots and thence ascending the axial scale, he groups the different articles successively until all belonging to the recognised parts of plants are described.

So many American botanic remedies are now employed in this country that a description of their physical characters, such as this volume affords, is often of much use. The following extract relative to an article of this kind may be given as an example of the character of the work:—

"GELSEMIUM. *G. Sempervirens*. Yellow Jasmine.—Long, spreading root, generally mixed with the overground stems. As found in commerce, sliced in cylindrical pieces, an inch or more in length, a half to an inch thick, very light and fibrous. Externally, grayish brown; internally, white; bark thin, medullary rays plainly observed; slight odour; lasting, bitter taste. Gelseminic acid (analogous to esculin, found in horse chestnut) and gelseminia are its important principles."

It will be observed that the author omits the letter "n," in accordance with weighty opinions, in the name of the above plant, but inserts it in the names of its active principles.

With the exception of the group of "herbs," the natural order of the drug described is not given. This is an omission in a work of this kind, as unless a student happened to know, for instance, that gelsemium belonged to the N.O. Loganiaceæ, he would have to look through nine columns of the chart at the commencement of the volume before he could ascertain the fact.

A table of vegetable poisons with their antidotes and of vegetable preparations with their incompatibles, not, as incorrectly termed, of "vegetable antidotes and incompatibles," and another table of

the tests and solubilities of the principal alkaloids, is appended. The work is one upon the execution of which the author has evidently bestowed much care and labour.

3. One of the reasons assigned by its author for publishing this "Aid Book" is that it may prove useful to those who feel obliged to take that part of their knowledge of materia medica derived from books "in as minimised a form as possible." Certainly, but a minimum of information could, we think, be obtained from these notes. They consist mainly of a bald statement of the mode of manufacture of the acids and salts of the British Pharmacopœia, with the chemical equation representing the reaction which occurs in each case appended. A few remarks on chemical nomenclature commence, and a synopsis of the ordinary tests for the metals and for the acids conclude a book which belongs to a class we have always condemned in this Journal. It is by trusting to such works that the student—to adopt the language of the author—so often finds his armour defective when he comes to try conclusions with his examiner.

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*An Atlas of Illustrations of Pathology.* Fasciculus II. London: The New Sydenham Society. 1879. H. K. Lewis.

THIS fasciculus completes the illustrations of renal, adrenal, and splenic affections. Plate V. figures amyloid disease of the kidney, the large smooth kidney, and medullary cancer of the kidney. Plate VI. is devoted to various diseased conditions of the spleen—viz.; Hodgkin's disease, infarctions, rupture, and the acute splenic enlargement in diphtheria. Plate VII. depicts tubercle and lardaceous disease of the spleen, together with cancer and adenoma of the suprarenal capsules, and also supplies two drawings of the suprarenal lesions in Addison's disease. The colouring of the plates in this Part is more artistically executed, and the morbid appearances are represented more true to nature, than was the case in some of the plates in Fasciculus I.

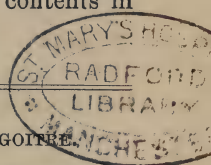
Plates VIII., IX., and X. present us with a number (58 in all) of excellent engravings, by Mr. Blight, of the histological conditions found in the specimens whose macroscopic characters have been already portrayed. The Atlas concludes with three pathological summaries. Dr. Greenfield contributes a pretty full *résumé* of our present knowledge of renal pathology, and Dr. Goodhart is respon-

sible for the text of the articles on diseases of the spleen and on diseases of the suprarenal capsules. We congratulate the promoters of this Atlas upon the successful issue of their undertaking, and, speaking from personal use, we can testify to the great value of the Atlas as an aid in clinical teaching, and in pathological demonstrations to a hospital class.

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*On Atrophy of the Stomach and on the Nervous Affections of the Digestive Organs.* By SAMUEL FENWICK, M.D. London: J. & A. Churchill. 1880. Pp. 187.

THIS is a book which, unless we are much mistaken, will take a high place, and keep it, among medical writings. It deals with many of the more obscure affections of the stomach. The book is almost equally divided between the subjects indicated in the title. The author shows that some cases of pernicious anæmia are to be referred to general atrophy of the gastric glands, and his labours in this direction are a welcome contribution towards the elucidation of that obscure disease. In treating of the neuroses of the digestive canal especial attention has been bestowed upon those disorders that are less known or are more apt to lead to errors in practice. The want of an index is partly supplied by a table of contents in the beginning of the work.




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ON DUBOISIA IN THE TREATMENT OF EXOPHTHALMIC GOITRE.

M. DUJARDIN-BEAUMETZ has employed duboisia in place of atropia in hypodermic injections in the treatment of exophthalmic goitre. In the two cases in which he has tried it, he has obtained a marked diminution of the palpitations and the vascular pulsations—that is to say, a decided amelioration. This, moreover, is the only result that has yet been secured by any of the methods of treatment recommended for this affection. The effects of the injections were decidedly cumulative, although the doses used were very small—from a quarter to a half a milligramme; distinct symptoms of poisoning, analogous to those produced by atropine, were observed after a few days. Hence it was found necessary to intermit the injections for several days after every week of treatment, and after a time to discontinue them altogether. The solution used was one centigramme of the neutral sulphate of duboisia to twenty grammes of aqua laurocerasi.—*Le Courrier Médical*, July 24, 1880, and *N. Y. Med. Rec.*



## PART III.

### HALF-YEARLY REPORTS.

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#### REPORT ON NERVOUS AND MENTAL DISEASE.<sup>a</sup>

By RINGROSE ATKINS, M.A., M.D., &c.; Resident Medical Superintendent, District Lunatic Asylum, Waterford.

##### I. INSANITY IN GENERAL.

*The Problems of Insanity.*—On the 3rd March last, Dr. George M. Beard, now one of the foremost neurologists in America, and whose works are extensively known on this side of the Atlantic, brought this subject before the New York Medico-Legal Society in a very interesting memoir. Dr. Beard first considers the definition of insanity, and offers the following as his solution of this very difficult and oft-attempted problem:—*Insanity is a disease of the brain in which mental coordination is seriously impaired.* The word “seriously” is emphasised, as the coordinating power of the mind is oftentimes impaired, slightly or even severely, but temporarily, as in an attack of drunkenness, or after an overdose of a narcotic, without insanity supervening; and the word “mind” is used in a broad sense, embracing all the qualities from the intellect to the so-called emotions and perceptions. The coordinating power of the mind may be seriously impaired even where there is no insanity, as is shown in idiocy. An idiot may be insane, but idiocy is not insanity; for the want of coordinating power in the idiot may be purely physiological—simply a lack of normal mental qualities without disease. The term “insanity” always implies disease, not mere deficiency of original endowment. Dr. Beard would bring all possible forms of insanity under two general classes—the *intellectual* and *emotional*; the intellectual including those forms where there are delusions, and the emotional

<sup>a</sup> The author of this Report, desirous that no contribution to the subject of Nervous and Mental Disease should remain unnoticed, will be glad to receive any publications which treat of it. If sent to the correspondents of the Journal, they will be forwarded.

including the forms where there are no delusions—so-called moral and impulsive insanity, and the like—in which the mental in-coordination is manifested simply in emotional disturbances.

According to this definition, then, four factors must unite to make out a case of insanity:—

(1) There must be disease of some kind ; (2) there must be disease of the brain, either direct or reflex ; (3) the mental co-ordination must be impaired ; and (4) this impairment of mental coordination must be serious, the word serious being used in a relative sense.

The second problem which Dr. Beard discusses is—*The General Causation of Insanity, and why it is Increasing in Frequency*. This latter he regards as the price of our advancing civilisation, and points out that in this the nineteenth century there are five features peculiar to it, and unprecedented in history, which exercise a marked influence on the health of the nervous system. These are:—The printing press, the telegraph, steam power, the sciences, and the mental activity of woman. He further points out that advancing civilisation presses most heavily on the poor—that they are, for the most part, deprived of the delights of primitive existence, without being able to enjoy any of the sweets of social and intellectual development, and that as a result the real or apparent increase of insanity is more noticeable in the lower than in the upper classes. He then proceeds to consider the difficulties attendant on the diagnosis of insanity in many cases, and finally discusses the questions concerned with the treatment of the insane and the future of insanity, advocating early recognition, and, in many cases, *positive* treatment without the walls of the asylum.

*The Recoveries from Insanity*.—In the last Half-Yearly Report (*Dublin Journal of Medical Science*, March, 1880) reference was made to Dr. Pliny Earle's utterances on this subject, especially in regard to his statements as to the erroneous statistics which have been brought out by the system of recording so-called recoveries usually in vogue. In the first number of the *Alienist and Neurologist*, published in January, 1880, Dr. Earle contributes further evidence in support of his views. He takes a table, published in the Report of the Worcester Lunatic Hospital for the year 1843, in which 25 persons are recorded as having been discharged recovered, and he has followed the life-histories of these 25 individuals since then, down to the present time, with the following result:—

1. The 25 persons were discharged, *recovered*, from the

hospital forty-eight times, contributing forty-eight recoveries to the statistics of insanity.

2. Five of the 25 died in lunatic hospitals, and these had been previously discharged, *recovered*, fifteen times—an average of three recoveries to each person.

He then compares the results of these 25 persons recovered at the Worcester Hospital with Dr. Thurnam's formula (*vide Dublin Journal of Medical Science*, March, 1880). According to the latter part of this formula two-fifths of the persons who recover should never have another attack, three-fifths *should* have a second attack, and two-thirds of that three-fifths should die insane. Therefore, of the 25 persons recovered—

(a.) *Ten* should never have a second attack.

(b.) *Fifteen* should have a second attack and perhaps more ; and

(c.) Of these *fifteen* ten should die insane.

But it is found in fact that, taking the 25 persons *at the time of their first recovery*, there were, under the most favourable construction—

(a.) Only *seven* who had not a second attack ; and

(b.) *Eighteen* had more than one attack.

(c.) As so many are still living, it is impossible to say what will be the final result in regard to the number dying insane. But already *five* have died insane at the hospitals, and *two* have died insane at home—making a total of *seven*. Two others are at almshouses, both having for a long period been incurably insane (they will undoubtedly die so), and one has died at home who “was never well (sane) but a few months at a time.” It is no exaggeration of the unpleasant aspect of these results to say that they are no more favourable than Dr. Thurnam's formula represents. Their near approximation to that formula is somewhat remarkable.

The investigations of Dr. Pliny Earle have drawn attention to the subject both in America and in these countries. Dr. Hack Tuke, in a paper read before the Psychological Section at the meeting of the British Medical Association at Cambridge in August last, and now published in the October number of the *Journal of Mental Science*, deals with the question in relation to Asylum Reports, pointing out how objectionable it is that year after year figures should go forward to the public representing the gross numbers of recoveries as the number of persons restored to society able to resume their place as useful members of the community ; from these figures many will believe that 100 recoveries represent 100

persons enjoying the use of their reason, instead of, in too many cases, oscillating between the world and the asylum. Dr. Tuke proposes to supplement the present tables in the Annual Reports of Asylums, by adding to the table showing the admissions and readmissions *the number of times* each patient has been admitted, and to the table of recoveries by giving separately, in addition to the number of cases recovered—

1. The number of *persons* who recovered.
2. The number who relapsed and who did not relapse.
3. Of those who relapsed the number who had again recovered at the date of the Report, thus showing, when added to the previous cures, the net number of recovered persons.

In the Report of this Asylum (Waterford) for the year 1879, I recorded the number of relapsed cases, and the particulars, as to time, of the relapse in each case; and in dealing with the recoveries calculated, in addition to the ordinary method, the *primary* discharges on the *primary* admissions, in order to ascertain the proportion between the number of *persons* admitted and those discharged.

Although Dr. Earle's papers have met with very general commendation, yet he is not without his critics. Dr. Isaac Ray, whose name as an American psychological physician is well known, takes him up on the points which he has advanced (*vide Dublin Journal of Medical Science*, March, 1880, p. 226) and asserts, supporting his assertion by arguments:—

1. That those qualities of temperament which lead men to unduly magnify their achievements are as common at one time as at another.

2. The practice of reporting cases instead of persons has not been confined to any particular period, and therefore while it may vitiate our estimate of the curability of insanity it cannot make the proportion of recoveries larger or smaller at one period than at another.

3. Cases marked by high excitement entered our hospitals in a larger proportion to those of an opposite character fifty years ago than they do now.

4. Under the influence of highly civilised life the conservative powers of the constitution have somewhat depreciated, and to that extent impaired the curability of insanity.

5. During the last five years cerebral affections, in which insanity is only an incident, have been steadily increasing and thus diminishing the proportion of recoveries.



Although these arguments are doubtless true as regards the general aspect of the question, yet it appears to me that the ratio of recoveries largely depends upon local circumstances—on the condition and surroundings of the hospital or asylum, and its state as to overcrowding for instance; if the local conditions be specially favourable, then it is only reasonable to suppose that a larger number of cases may recover, and so swell the lists of such asylums without there being any undue desire on the part of the physician to press every case he safely can into his recovery tables. That a statistical fallacy has hitherto existed in the gross number of recorded recoveries is, I think, certain, and it will be interesting to watch the influence on such statistics which the attention drawn to them by the opinions of Dr. Pliny Earle may have the effect of producing. I may here add that Dr. Earle has replied to Dr. Ray, again advancing and supporting his previous statements with fresh comments.

In the *Journal of Psychological Medicine*, April, 1880, Dr. W. A. F. Browne has a paper on "The Curability of Insanity," in which he follows out the line of inquiry suggested by Pliny Earle, and generally supports his views by reference to statistics and facts which have come within his knowledge.

*Leidesdorf on the Classification of Insanity.*—In briefly reviewing various past and present systems of classification, Professor Leidesdorf (*Wiener med. Wochenschr.*, April 3 and 10, 1880) remarks that the only points on which all are agreed with regard to this question are—(a) that a classification based upon pathological anatomy is at present impossible; (b) that a purely ætiological classification is quite insufficient; and (c) that a classification founded on clinical symptomatology is therefore the only one practicable. The author then proposes to divide all forms of insanity into three great divisions—viz., (1) typical psychoses; (2) atypical psychoses; (3) definite forms of disease accompanied by psychic disturbance. Under the head of typical psychoses are included conditions of mental depression, exaltation and weakness—that is, melancholia, mania, delusional insanity, and dementia. The atypical psychoses are—(a) periodical insanity, which may be (1) simple, or (2) circular; (b) primary delusional insanity; (c) primary dementia. Under the third great division are classed—(a) paralytic, (b) epileptic, (c) toxic insanity. Under the last head are included—chronic alcoholism, morphinism, poisoning by carbonic oxide, lead, &c. In dividing typical psychoses into conditions of

mental depression, exaltation, and weakness, Leidesdorf follows Griesinger, but does not adopt his subdivisions of these into primary (melancholia, and mania), and secondary (delusional insanity and dementia), because it is now known that the two last-named conditions of psychic weakness may arise primarily. When they do exceptionally commence in this way they are classed with the atypical forms. With regard to primary delusional insanity (without exaltation or depression) the author expresses his disbelief that a man, the condition of whose brain is intact, can become suddenly subject to delusions and hallucinations. His observations lead him to the conclusion that this form of insanity occurs only among—(1) individuals who are, in the widest sense of the term, hereditarily predisposed, and who have always suffered from peculiar mental obliquity, who soon became delirious under the influence of fever, and who do not bear alcoholic stimulants well; (2) persons who have suffered during childhood from severe cerebral disease; or (3) people who, during latter life, have received injuries to the head, or have been otherwise damaged by enteric fever, intemperance, &c. Cases are given in illustration of this view; and we are told that patients who are thus affected always exhibit abnormalities in the commencement and course of psychic disease. The periodic forms of insanity also commonly occur among patients of this class, which would thus appear to furnish almost all examples of atypical psychoses.—(*London Med. Rec.*, October, 1880.)

## II. ANATOMY AND PHYSIOLOGY OF THE BRAIN AND NERVOUS SYSTEM.

*Visual Sphere of the Cerebral Cortex.*—Further communications on the above subject were made by Munk to the Berlin Physiological Society (July 4, 1879, *Arch. für Phys.*, Heft 5 and 6, p. 581, 1879). He had previously discovered that the extirpation of a cortical fragment near the upper and posterior apex of the occipital lobe destroys in the dog the remembrance of visual impressions, as far as the eye of the opposite side is concerned. The animal sees, but does not understand what it sees. From this state of blindness the animal can recover by practice. Further destruction of the cortex around this “visual centre” renders the blindness permanent. In the monkey the same results could be obtained, with this difference, that each cortical centre is connected with one-half of both retinæ. Hence hemiopia is produced by destruction

of the centre—the retinal halves on the side of the lesion failing to perceive. But in the dog the optic decussation is also not complete, as Gudden has shown anatomically, while the experiments of Nicati and others have confirmed this point. Munk, therefore, wished to learn how, in this animal, the retina is connected with the hemisphere of the same side. For this purpose he extirpated the complete cortical visual sphere of the *left* side in many dogs, observing the following results in a number surviving during weeks and months:—After the surgical fever has passed off, the dog appears almost normal. His movements and senses, except sight, are perfect; but he turns more readily to the left than to the right side. If the right eye is closed, he sees apparently well with the left; but if the left eye be covered, the dog will not move spontaneously, but if forced to walk, he protrudes the head, advances carefully, turns often towards the left, and strikes against obstacles on the right side. This blindness improves slightly in the course of some weeks. On taking greater care in the examination, Munk learned that the extreme right portion of the right retina was still sensible; that the animal could hence see objects in the corresponding part of the field of vision—*i.e.*, when placed on the left side of the head. But though that portion of the retina could still see, the animal recognised objects but imperfectly with it. This faculty, however, improved by practice. The corresponding extreme left portion of the left retina was absolutely blind. Hence the conclusion that in the dog each hemisphere is connected with the greater (median) half of the other retina and the corresponding lesser (lateral) portion of the retina of the same side. Partial extirpations in the region of the visual centre showed that the different regions of the retinae are represented by distinct and corresponding cortical localities. The extreme lateral portion of each retina connects with the lateral part of the cortical visual sphere of the same side. The remaining large median half of each retina is united to the balance of the cortical centre in the opposite hemisphere, in such a manner that the lateral border of the retina corresponds to the lateral border of the cortical centre, while the median retinal end belongs to the median part of the cortical sphere. The upper and lower borders of the retinal expansion are similarly represented by the anterior and posterior ends of the cortical centre. The middle portion of the cortical centre—the destruction of which causes the greatest visual impairment comparatively—corresponds to the point of acutest vision of the oppo-

site retina, the homologue of the human fovea centralis, which in the dog is situated about  $30^{\circ}$  laterally from the retinal centre.

*The Nerves of the Cornea.*—At a session of the Soc. de Biologie, in May last (rep. in *Le Progrès Medical*), M. Ranvier read a paper on “The Nervous Terminations in the Cornea,” of which the following are the conclusions:—

1. The nutrition of the cornea continues to be regularly carried on after cutting all its nerves. There are, therefore, no trophic nerves in the cornea.

2. The nerve fibres form a plexus, and not a net-work, in the cornea.

3. The plexiform appearance of the nerves of the cornea is in relation with the transparency of the organ.

4. The corneal nerves are nerves of general sensibility.

*Paths of Conduction of Sensory and Motor Impulses in the Cord.*—Drs. Isaac Ott and R. M. Smith publish (*Am. Journ. Med. Sci.*, Oct., 1879) an account of their experimental investigations on this subject. They employed rabbits for their experiments, using Woroschiloff's instrument for the spinal sections, and testing the sensibility and voluntary motor power of the different limbs after sufficient time had elapsed for the effect of shock to pass off. From thirty experiments on rabbits the following conclusions are drawn:—

1. That the motor and sensory fibres in the cervical segment of the spinal cord run exclusively in the lateral columns.

2. That the nerves administering to respiration, vasomotor nerves, and cilio-spinal nerves, also run in the lateral columns.

3. That the posterior columns are concerned in coordination.

4. That irritation of the cervical cord causes coordinated jumping movements.

5. That no sensory fibres pass to the brain in the posterior columns.

*Functions of the Posterior Columns of the Cord.*—At the session of the Soc. de Biologie, Nov. 29, 1879 (rep. in *Gaz. des Hôpitaux*), M. Laborde reported the results of experiments on young kittens by section of special portions of the cord. These animals offer special advantages for physiological experimentation; they have great vital tenacity, their bones are still soft, and they can be preserved after extensive injury by simply returning them to the care of the mother cat, who affords them the best sanitary conditions and nursing. He was able to make partial sections of the cord in these animals, and afterwards observe the effects without



complications vitiating the experiments. Notably among these he had made section of the posterior columns, and noticed, as a consequence, no other functional disturbance than a slight degree of incoordination of movement, especially in the posterior members. Sensibility, except in being perhaps slightly heightened, was not affected appreciably. In a brother of this same kitten he divided, under the same conditions, the central gray axis, producing complete loss of sensibility by defect of conduction—a confirmation of existing ideas. But as regards the posterior columns, the experiments indicate that their real function is still unknown.

At the session of Dec. 6, M. Laborde reported similar experiments upon guinea-pigs. Section of the central gray axis produced the same effect as in the cat; section of the antero-lateral columns produced paralysis of the posterior limbs, with preservation of sensibility (*American Journ. of Nervous and Ment. Dis.*).

### III. NEURO-PATHOLOGY.

*Cerebral Thermometry.*—In the issues of the *Alienist and Neurologist* (St. Louis) for January and April is the translation by Dr. Workman, of Toronto, of an elaborate article on their researches on cerebral thermometry, by Drs. Sepilli and Maragliano, of Reggio Emilia, from which they formulate the following conclusions:—

1. The medium temperature of the sane man is, according to our observations, 36·13 (R.) for the left side, and 36·08 for the right side—36·10 for the whole head. As to the diverse regions, the means of the frontal lobes are 36·20 for the left, and 36·15 for the right; of the parietal, 36·18 for the left, and 36·15 for the right; of the occipital, 36·13 for the left, and 36·08 for the right.

2. In the insane, with the exception of simple hyperæmia and dementia, the mean temperature of the head is above the normal.

3. The highest degree is reached by mania with fury (36·89), lypemania agitata comes next (36·81), then follows general paralysis (36·63), dementia agitata (36·45), imbecility and idiotism (36·54), mania without fury (36·30), simple dementia (36·03).

4. In all the forms of mental disease the occipital lobes, as in the sane man, give a temperature lower than the other lobes; the temperature of the frontal lobes, which equals that of the parietal in dementia agitata, imbecility, and idiotism, exceeds it in mania, simple lypemania, and simple dementia, whilst in general paralysis and lypemania agitata the temperature of the parietal lobes is higher than that of the frontal.

5. In all the principal groups of mental diseases the mean of the two halves of the head is almost equal, with the exception of the congenital forms, in which the various regions of the right half present figures higher than those of the left half.

6. The results of cerebral thermometry placed in accord with what is known of the pathological anatomy of insanity, confirm the fact that in general paralysis, mania, and divers periods of exaltation, which are frequently manifested even in forms of depression and mental enfeeblement, there exists a state of hyperæmia of the brain.

7. The surrounding temperature has a notable influence on the results of cerebral thermometry.

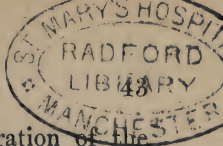
8. The general temperature of the body in the insane, taken in the axilla or in the rectum, is greater in lypemania agitata and mania furiosa, and in decreasing order it proceeds, diminishing in general paralysis, dementia agitata, mania without fury, imbecility and idiocy, tranquil dementia, and simple lypemania.

*On Combined Primary Disease of the Columns of the Spinal Cord.*—Dr. Westphal has contributed two articles on this subject in the *Archiv für Psychiatrie* (Band VIII., Heft 2, and Band IX., Heft 3), which have been analysed by Dr. Ireland in the *Journal of Mental Science*. Some of Dr. Westphal's cases illustrate the extension of disease of the spinal cord to the lateral columns. When this extension is indicated by the failure of muscular power, or by actual paralysis, there is agreement between the observed pathological lesion and the explanation of physiologists, but unhappily these two classes of observations do not always agree. Drs. Friedreich and Schultze examined the spinal cord of a man who had died of typhoid fever after suffering from locomotor ataxy for twenty-three years. There was no real loss of muscular power, except perhaps a little in the flexors of the femur, although the antero-lateral columns of the cord were found affected. Dr. Westphal is not disposed to admit that in this case the disease of the antero-lateral columns was so far advanced as that of the posterior columns; if it had been so the command of the muscles would have been seriously impaired—in fact, Friedreich found that a greater number of nerve fibres were entire in the antero-lateral than in the posterior columns. But Westphal himself has studied several cases in which there was, in addition to ataxia, paralytic weakness of the lower extremities. He points out that, along with the atrophy of the muscles, there is also a disappearance of the fatty

tissues of the affected limb, and this cannot be attributed either to chronic myositis or to the alteration of the nerve cells of the anterior cornua.

Moreover, the excitability of the muscles to electricity and the reflex action still remain. Unfortunately, the spinal cords in these instances were not subjected to microscopical examination. Dr. Westphal is disposed to believe that the real cause of the diminished muscular power lies in the diminished energy of the motor impulse.

In opposition to Charcot, Westphal gives us the result of his observations, that combined disease of the posterior and lateral columns is not followed by spastic contractions. If the disease of the posterior columns has involved the lower portion of the cord, and those parts of the cord indicated as the deep origins of the spinal nerves, the only lesion found was degeneration of the posterior tract. Similar instances have been described by Türk, Leyden, and others. This last observer regards such cases as pseudo-paralysis, owing to weakness of nervous power or diminished impulse of the will. He thinks it a confirmation of this view that paralysis bearing this character is commoner with women suffering from ataxia than with men, as women are more disposed to yield to any impediment to locomotion. Dr. Westphal, who does not accept this explanation, starts the question whether the muscular weakness is owing to alterations commencing not in the spinal cord, but in the muscles themselves. He gives, as the result of his pathological observations upon the lesions observed in those who have suffered from paralysis beginning in the brain, that we never meet with a granular degeneration in the posterior columns of the cord along with a gray degeneration (sclerosis) of the antero-lateral columns, and a gray degeneration of the antero-lateral columns is never met with if the posterior columns show a granular degeneration—in other words, the character of the degenerative process, whether granular or sclerotic, is always the same in both columns. Westphal finds that spastic spinal paralysis—*i.e.*, paraplegia, with rigidity, contractions, tremors, and heightened reflex action, may accompany a variety of lesions; it may be the result of primary disease of the posterior and lateral columns, as well as of sclerosis and inflammation of the cord about the upper dorsal region; it may follow disease of the antero-lateral columns in connexion with disease of the posterior column, if the latter involve the lower parts of the cord. Spastic spinal paralysis may



also, as Charcot has pointed out, accompany degeneration of the cord occurring in patches.

*Gray Degeneration of the Cord with Disseminated Sclerosis.*—Westphal also (*Archiv für Psych.*, Band IX., Heft 2) describes a case where gray degeneration of the posterior columns was found to be combined with disseminated sclerosis of the other tracts, as well as the gray substance of the cord. This combination is so rare that Westphal claims the honour to be the first to produce an undoubted example, and we must now modify the proposition that degeneration of the cord and partial sclerosis do not occur together. The subject was a man, forty-six years old at the commencement of the disease, which lasted four years. There was degeneration of the posterior dorsal region, and disseminated sclerosis throughout the cord, with rigidity of the quadriceps following on passive flexion of the knee-joint and absence of tendon reflex. The man had also fatty disease of the heart, with hypertrophy and dilatation of the left ventricle, and inflammation of the kidneys and bladder.

At the end of his article Westphal observes that the statement that the tendon reflex fails in those cases in which the degeneration of the posterior columns has involved the dorsal region, even when the lateral columns are also affected, is one of the best established data in the pathology of the cord.

*The Changes in the Brain and Cord in Hydrophobia.*—Dr. O. Weller (*Archiv für Psychiatrie*, Band IX., Heft 3), in an article on this subject, remarks that Dr. Moritz Benedict, of Vienna, was one of the first to indicate the peculiar lesions in hydrophobia, and he sums up his results thus :—

1. There was hyperæmia and widening of the vessels and extravasations, with deposits of red and white corpuscles in the surrounding tissue.

2. There was effusion of lymph in the tissue of the brain and little hyaloid abscesses arranged in a racemose manner in the substance of the brain and granular disintegration of the nervous substance, with little spots of pigment girding round the vessels. Similar alterations in the brain were described by Kolesnikoff and Wassilief, and Gowers and Cheadle discovered hyperæmia and extravasations in the pons and medulla oblongata. Dr. Weller has himself examined seven brains and spinal cords of people who died of hydrophobia in the epidemic at Zurich. His specimens were subjected to a careful chemical and microscopical preparation



both in the fresh and hardened condition. He found hyperæmia visible to the naked eye in the pia mater and brain; but the congestion was greatest in the medulla oblongata and spinal cord. Extravasations of blood were also seen under, and the vessels were shown to be surrounded with, a lymphoid effusion. Dr. Weller describes scattered amongst the effusion of lymph masses of yellow fatty matter. These are circular, oval, or polygonal bodies reflecting light strongly and with a sharp outline, and colour varying from pale yellow to golden. Their size varies from 0.0015 to 0.01 of a millimetre. They are unaffected by acids or weak alkaline solutions, but are slowly transformed by alkalis, and are promptly dissolved by ether and chloroform. These corpuscles are found in great abundance in the brain and spinal cord accompanying the vessels and hanging on or about them like grapes on a stalk. Dr. Weller has never seen any similar products in other diseases of the nervous centres of man or the dog. He has sought for them in cases of myelitis in the dog without success. He therefore feels himself warranted to treat these yellow fatty corpuscles as pathognomonic of hydrophobia. Similar deposits have been described by Continental writers already cited, but, apparently, after a less decided fashion.

I may here remark, in reference to "deposits" or "bodies," such as those here described, or of somewhat similar kinds, that the results of examinations which I have made point to the probability that such apparently abnormal conditions are not in reality morbid, but are artificially produced *post mortem* by the action of the *alcohol* used at one time or other in the preservation or preparation of the specimens on the constituents of the nervous tissues.

Dr. Dickinson, some years since, in recounting the appearances presented by the nervous structures in diabetes, described a peculiar aggregation of clear globular bodies, somewhat resembling soap-bubbles, occupying the perivascular spaces, which he believed to be products of nervous degeneration. It would seem that these are somewhat similar to those now described by Dr. Weller, and may be but of *post mortem* formation.

Dr. Weller sums up his results as follows:—

1. Hydrophobia localises itself in the form of an inflammation commencing from the vascular system. This inflammation is characterised by exudation round the vessels and infiltration of the tissue, sometimes in particular spots, and sometimes diffused. At the same time there is observed a peculiar fatty body in the peri-

vascular spaces. This is probably a result of degeneration of the nerve elements.

2. The inflammation is to be regarded as the first stage of an acute myelitis and encephalitis. The process lasts too short a time to allow of it passing into softening, as in ordinary acute myelitis, the disease soon ending in death.

3. The short duration of the disease is owing to the part which it more particularly seizes upon—the medulla oblongata and the nuclei of the glosso-pharyngeal, vagus, and spinal accessory nerves.

4. In man the morbid processes seem to be confined to the spinal cord and medulla oblongata; but in the dog the inflammation affects also the brain.

*Analysis of Bones in Ataxic Arthropathies.*—It appears, from an analysis reported to the Soc. de Biologie, Nov. 29, 1879, by M. P. Regnard (*Le Progrès Medical*, Dec. 18), that the condition of the bones in the joint affections occurring during the course of locomotor ataxy is somewhat comparable to that in osteomalacia. He found in a femur from an ataxic patient, in which the bone was much eroded, the following constituents:—In 100 grammes there were 75·80 grammes of organic and 24·20 grammes of inorganic matter. The organic matter consisted of—osseine, 38 grammes (normal proportion); fat, 37·68 grammes. The inorganic matters comprised only 11 grammes of carbonate of lime, and only 11·9 grammes of phosphate of lime. The fatty matters had, therefore, replaced the phosphate of lime normally present in the bones.—(*Am. Jour. of Nerv. and Ment. Dis.*)

*The Pathological Anatomy of Infantile Paralysis.*—At the session of the International Medical Congress at Amsterdam, Sept. 11, 12, 13, 1879 (rep. in *Le Progrès Medical*), M. Damaschino communicated, for himself and M. Roger, the results of their researches on the pathological anatomy of infantile spinal paralysis. The following were the principal facts:—1. The anatomical lesions in infantile spinal paralysis are located in the motor regions of the cord. 2. These lesions consist in a central myelitis, with *foyers* of softening and atrophic destruction of the cells of the grey matter; there is also sclerosis of the lateral columns and considerable atrophy of the anterior roots, as well as of the nervous tubes corresponding to the paralysed muscles. 3. The atrophy of the cells has, doubtless, as was first shown by M. Charcot, a great importance in a pathogenetic point of view; but MM. Roger and Damaschino deem it necessary to insist on the fact that this cell atrophy is not the

whole morbid process, as it appears to be in progressive muscular atrophy; and it is probably in this histological difference that we must seek the explanation of the clinical differences manifested by the two diseases. 4. It may yet be asked, as it has been asked by M. Leyden, whether there are not two forms of infantile myelitis—the one *en foyer* and the other diffused; but new facts are needed to answer the question, which remains undecided in the present state of our knowledge. 5. As regards the question whether the inflammation of the cord begins primarily in the connective tissue (interstitial myelitis) or in the motor cells (parenchymatous myelitis), this is a point as yet unsettled.

*The Tendon Reflex.*—At the last meeting of the German Naturalists and Physicians' Association, Dr. Senator, of Berlin, gave the results of his researches on the tendon reflex. He experimented on dogs and rabbits. First, he confirmed the statement of Tschiriew, that section of the cord between the fifth and sixth lumbar vertebræ prevented the appearance of the patellar tendon reflex, and further determined that only slight blows on the sinew—either laid bare or covered with the natural integument—produced the contraction of the extensor cruris, and that other forms of excitation, pinching, pricking, or faradisation of the sinew, had no such effect. Hemilateral section of the cord affected the reflex only on the side of the cut, thus showing that the nerve fibres involved did not decussate. Moreover, he made the astonishing discovery that section of the posterior columns is without influence on the phenomenon: it certainly does not decrease, but perhaps increases it. Injury of the posterior horns is also without effect. As far as Senator can at present say, the phenomenon is only certainly suppressed by section of the antero-lateral columns; perhaps, also, with part of the anterior horns. In conclusion, he referred to the connexion of the results with the latest pathology, and especially to the difficulty of reconciling them with the commonly accepted theories of the phenomenon.

*Aphasia with Left Hemiplegia.*—In this case, reported with great care by H. Ledouble and Viollet, of Tours, the autopsy revealed embolism of the right Sylvian artery, with softening of the right third frontal convolution and of the lobule and island of Reil. The third left frontal was absolutely healthy, and the patient was right-handed.

*Atrophy of Cerebral Convolutions in a Case of Previous Amputation of the Thigh.*—This case, also reported by H. Ledouble and

Viollet, was that of a man of forty-one years, whose right thigh had been amputated in 1859, after the battle of Magenta, and who died in the hospital at Tours, of chronic enteritis, twenty years after the operation. The autopsy revealed a well-marked depression on the left hemisphere at the level of the posterior third of the second frontal convolution. This depression was due to atrophy of the second frontal convolution at the union of its posterior third with its anterior two-thirds. The convolution at this level was shrunken, sunk in, and measured 7 millimetres in thickness, while the thickness at the same point on the opposite was 1 centimetre.

*On Early Syphilitic Affections of the Nervous System.*—In the *Annales de Dermatologie et Syphiligraphie* Dr. Charles Mauriac records his recent researches on this subject. From the facts which he has collected and the investigations made, he deduces the following propositions:—

1. At a period closely following on the primary disease syphilis is capable of invading the nervous system.

2. The early cerebro-spinal syphilomata are those which develop during the most virulent period of the disease—that is, during the first two or three years.

3. There are varying degrees in the precocity of cerebro-spinal syphilomata. The first comprises those which appear during the first twelve months; the second those which develop in the second and third year of the constitutional malady. Statistics show that those of the first degree are more common than those of the second.

4. Amongst the early visceral manifestations of syphilis, the cerebro-spinal syphilomata are incomparably the most numerous.

5. They are also more dangerous. Their gravity is not in direct ratio to their age and diathesis: those which supervene during the first months of syphilis are as formidable as those which appear during the most remote phases of the disease.

6. The various forms, degrees, and combinations which constitute the symptomatology and the morbid processes of syphilis of the nervous system are found as well in the early cerebro-spinal syphilomata as in those which appear at a later date.

7. There are, however, some symptomatic conditions which appear to predominate, the most frequent of which is an attack of hemiplegia affecting the entire of one half of the body.

8. Amongst these hemiplegic attacks, right-sided paralysis and aphasia hold a preponderance.



9. The paralytic forms are much more numerous in precocious cerebro-spinal syphilomata than the convulsive or epileptic.

10. In cerebro-spinal syphilomata the mental troubles and inco-ordination of movement are never as orderly in their occurrence as in insanity, general paralysis, and in locomotor ataxy.

11. The absence of this regularity and order in the manifestations of cerebro-spinal syphilomata must be regarded as one of their principal characteristics; exception being made in regard to the occurrence of right hemiplegia and aphasia.

12. The manifestations of early syphilis on the spinal cord are much less frequent than on the brain.

13. Hyperplastic effusions, either circumscribed or diffuse, but more especially circumscribed, on the cerebral cortex and pia mater, alterations (thickening) of the Sylvian arteries, and consecutive patches of softening, are the lesions which appear to arise from early cerebro-spinal syphilomata.

14. In some reported cases where death followed early cerebro-spinal syphilomata no lesions were found *post mortem*, but then the arterial changes were as yet unknown. It is probable that death resulted from sudden anæmia, which caused shock to some centres of innervation indispensable to life.

15. Only very vague conjectures can be made on the ætiology of early cerebro-spinal syphilomata. In the majority of cases the primary disease, as well as the consecutive cutaneous and mucous manifestations, has been of a mild character.

16. The general course of the constitutional malady is not modified by the occurrence of early manifestations of implication of the nervous system. Other affections appearing before or after the neurotic attacks undergo no change therefrom, either in their form, degree, or topography.

17. The precocity of cerebro-spinal syphilomata do not furnish any particular indication for treatment. Whatever be the age of the constitutional malady the manifestations of nervous implication call for the same specific treatment, special circumstances affording indications as to the choice, doses and combinations of the two specific agents.—(*Annales Méd. Psychol.*, March, 1880.)

*Secondary Syphilitic Epilepsy.*—Fournier, in an article on this subject (*Annal. de Dermatol. et de Syphiligraphie*), says that epilepsy occurring in the earlier stages of the evolution of syphilis shows very different symptoms from that variety due to lesions of the brain, and which ordinarily occurs in later stages of the disease.

The latter is well known, and has been described by himself in his recent work on "Syphilis of the Brain." After giving notes of three cases out of a dozen he has observed, Fournier records the following conclusions:—1. It is impossible to regard the symptoms shown as due to any other cause than syphilis, for these attacks occur for the first time in adult age, while non-syphilitic epilepsy begins in youth; non-syphilitic epilepsy does not begin and end abruptly. Again, in syphilitic cases such exciting causes as lead or other poisoning, alcoholism, worms, &c., may be excluded. Thus only syphilis will account for the symptoms. 2. In every case observed the epileptic attacks have occurred in the earlier months of the secondary stage, just when nervous troubles are commonest, and most of the cases have been women who are particularly liable to nervous syphilis. 3. The epileptic attacks occur simultaneously with the appearance of various other syphilitic manifestations, as skin troubles, glandular enlargements, alopecia, cephalalgia, insomnia, neuralgic pains, &c. 4. The epileptic symptoms pursue a parallel evolution with the other syphilitic symptoms. They appear when these are at their worst; they grow better as these improve. 5. As to the curative influence of specific treatment in each of the cases noted by Fournier, the epileptic disease was rapidly and certainly cured by the administration of mercury.

Finally, the appearance of epilepsy at this stage of syphilis is not surprising. Secondary syphilis is exceedingly fertile in nervous troubles. In some individuals, notably in women, it gives rise to a state of general nervous disturbance. There appears to be a condition of erythism, which seems to accumulate until it discharges itself in a series of epileptic attacks. In a future communication Prof. Fournier intends to show the distinction between this secondary form of epilepsy and the tertiary form.—(*Am. Journ. Nerv. and Ment. Dis.*, from *Phil. Med. Times*.)

*Clinical Study on Certain Points connected with Melancholia.*—In the *Annales Méd. Psychologiques* for March and May, 1880, is published the memoir on this subject, by Dr. H. Mabile, which gained the prize offered by the conductors of this journal in 1879. The memoir consists of two parts. The first is based on a number of observations on the pulse, the respirations, the temperature, and the arterial tension amongst melancholics; the second consists of a series of observations on the loss of sensibility of the digestive apparatus amongst those affected with melancholia. As regards the pulse, respirations, temperature, and arterial tension, the following

conclusions are drawn by the author as the outcome of his observations:—

1. So long as there is no diminution in the functions of locomotion amongst melancholics (the active form), the temperature, pulse, and arterial tension remain normal.

2. As soon as the “state of hallucination” is sufficiently intense to produce complete melancholic immobility (passive form), or relative immobility (semi-passive form), a diminution in the external temperature of the body is observed, the number of pulsations and respirations is diminished, and the arterial pressure is increased.

3. In certain cases where this primary cause (defect of motility) is combined with peripheral vasomotor disturbances, which coincides with determination of blood towards the central organs, a diminution in the number of pulsations, an increase in the arterial tension, and a lowering of the temperature occur.

4. The number of pulsations is not in exact accord with the degree of heat amongst melancholics, but there is a constant relation between the augmentation of the arterial tension and the diminution in the number of pulsations, except in cases of profound anæmia and anxious melancholia.

*Note.*—Without digressing from the lines of the inquiry, the consequences of increase in the arterial tension amongst melancholics may be indicated. It is evident that the heart, having greater obstacles to overcome, must make a more vigorous effort than in the normal physiological state, and, as in organs so overworked, hypertrophy results. Cardiac hypertrophy has been recognised in a great number of cases of melancholia by authors who assign to affections of the heart a causal influence in the mental condition (Esquirol, Bayle, Calmeil, Shore, Morel, Erlenmayer). Instead of being *primary* the hypertrophy must be then *secondary*, and according as the contraction of the vessels following the vasomotor irritation is more pronounced, will be in turn greater.

This portion of the paper is illustrated by a number of sphygmograms representing the varying conditions of the arterial tension in the active and passive forms of melancholia. A number of observations on the condition as to sensibility of the digestive tract are recorded in the second part of the essay, and the following conclusions are deduced from them:—

1. Besides peripheral anæsthesia there is frequently found amongst certain cases of melancholia a paralysis of sensation, either

total or partial, of the digestive tube, the existence of which it is possible to determine up to a certain point.

2. This paralysis appears to be consecutive to refusal of food.

3. The nervous exhaustion resulting from emptiness, and the sudden distension of the stomach by alimentary substances appear to be the principal causes of this condition.

4. This anæsthetic state hinders assimilation, diminishes the vital forces of the patients, and, in spite of the ingestion of food sufficient to sustain life, allows the sensation of hunger to continue, which, together with anæmia, aggravates the delirium.

5. By œsophageal catheterisation, practised at the onset of the refusal of food, and by the slow ingestion of alimentary substances into the stomach, these accidents can be prevented.

6. Tincture of nux vomica, to combat the constipation, and, if the anæsthesia be set up, pepsine and neurotic excitants, with electricity, will prove curative in the majority of cases.

*The Psycho-Physiological Training of an Idiot Hand.*—This paper, which was read before the British Medical Association at Cork, by Dr. E. Seguin, has been since then published in New York. It contains the philosophic narrative of the means adopted to develop and train the stunted and ill-formed hand of a boy (R.) aged seven years when the systematic training was commenced, who, at the age of eighteen months, had convulsions, and grew up idiotic. The memoir is illustrated by four lithographs representing the child healthy at six months, at eighteen months after convulsions, at seven years with idiotic look and hands, and one year after this showing the improvements brought about by careful training under a persevering and skilful teacher. When first taken under care the boy could move the hand automatically, but he had little or no power of using it under the control of the will, or at command. "He could not put it or the fingers in any given attitude. He could not rotate on command that wrist so nimble when striking or vibrating automatically. He could obey the movements of elevation and abduction of the arm, but not always, nor with anything like precision. Therefore his teacher had to begin the training of that hand from the shoulder by movements which, starting from the elevators of the arm, would involve successively the muscles of the arm and the hand. Thus, by a series of operations whose willed or obedient starting-point descended gradually from the spine, the child became capable of moving the hand and fingers, by imitation at first, and *proprio motu* for simple willed



operations later. These operations of the hand are too many to be enumerated, but can be comprised under several heads abstractly of their object—as to hold passively and take hold willingly, to lift, grasp, support, let go, throw, catch, collect, trace, delineate, compress, curb, break, cut, pierce, pass through, model, assemble, group, combine, connect, unite, fasten, separate, divide, tear asunder, peel off; cut with knife, scissors, saw, hammer; pull in, up, down, and away. And if we consider that so many operations have to be taught in relation to an infinite number of objects, as, for instance, cutting hundreds of bodies of variable density and modes of resistance, besides all the minutiae of the acts of common life of which R. was incapable. The intellectual value of these exercises (brachial, manual, or digital) will depend on their precision, rapidity, unity, singleness, or complexity, as the case and the period of training will indicate. The boy was brought to be able to execute a large number of willed movements, and through this limb-training the mental condition also became considerably developed; and it was noticed that when the manual training was allowed to drop for a time, the hand became soft and lifeless again, but he did not forget what he had learned through its means. This pamphlet has now a melancholy interest added to it, as news has just come to hand of the death of its veteran author at New York. Dr. Seguin was, during a long lifetime, an indefatigable worker in the field of idiocy and imbecility, and was a true friend to this afflicted class, whose condition he did much to ameliorate by his personal exertions as well as by his writings. He was a man of extensive scientific acquirements, and in personal intercourse most amiable and courteous. He visited this country on several occasions recently, and was on the last occasion enthusiastic in his efforts to introduce the metric system into use at this side of the Atlantic.

*Cysticercus of the Brain.*—Dr. Baillarger contributes, in the *Annal. Méd. Psychol.*, a case in which cysticercus of the brain was the starting-point of an attack of general paralysis, and premises his remarks by expressing a doubt whether the same effective cause has been hitherto observed. The prominent symptoms were—intense headache during the four years preceding the attack; embarrassed speech; impaired memory; hallucinations of sight; congestion, with transient hemiplegia; and later aggravation of all these symptoms. It is interesting to note, in connexion with the attacks of hemiplegia, that they occurred exclusively on the right side. The cysticercus, which was about the size of the end of the

little finger, and had a diameter of nine millimetres, was found on the right hemisphere, at the union of the posterior with the middle lobe, and above the corpus callosum. Attention is directed to the intense cephalalgia, the impaired vision—one of the first symptoms—and the hallucinations of sight which occurred later in the disease.—(*Am. Journ. of Insanity.*)

*Epileptic Insanity.*—In an interesting paper on “Some not generally-known Forms of Mental Alienation related to Insanity,” in the *St. Louis Clinical Record* for March last, Dr. E. C. Spitzka discusses the various forms of insanity related to epilepsy, and the classifications of the same of Falret and Samt, of which he gives an outline. After noticing the division by Samt of these cases into simple post-epileptic stupor, post-epileptic stupor conditions of fear or fright, and post-epileptic maniacal moria, he says:—“Under the head of chronic protracted epileptic insanity he describes many cases which are evidently related to the post-epileptic forms. On the other hand I have observed some cases in which gradually-increasing verbigeration, delirium of a religious tinge, or maniacal attacks with or without intervals of stupor, confusion, and automatism, preceded the outbreak of a convulsion or its equivalent. Just as the forms characterised in Samt’s classification were designated post-epileptic, these latter, noted by myself, and which are far more infrequent, deserve being designated as prodromal or *pre-epileptic*. If the chronological relation of the mental disturbance be made a principle of classification, then I think much confusion could be avoided by adopting the following:—

“1. The epileptic psychical *equivalent* which replaces the convulsive attack.

“2. The acute post-epileptic insanity which almost immediately follows the convulsive attack (including the ordinary post-convulsive stupor as a part of the attack) or the psychical equivalent of such convulsive attack.

“3. The pre-epileptic insanity which precedes the outbreak of a convulsive attack or its equivalent, and increases up to the moment when the paroxysm explodes.

“4. The purely intervallary epileptic insanity which, neither immediately following or preceding a paroxysm, occurs in the interval between such. It is possible that all such cases are, after all, equivalents of imperfect convulsions; but as long as the relation cannot be clearly established it is well to provide a category for the reception of such doubtful cases.

“It is possible for all these four to occur together, and in addition there is very apt to be a background of chronic protracted epileptic dementia to complicate the picture. It is only when epilepsy is recent that the above forms are found in an unmixed state. As the disease progresses we are very apt to find that the post-epileptic *grand mal intellectual* of Falret and Samt is in intimate association with a “replacing” attack of violence. Such cases—lasting, with their correlated stupor, delirium and confusion, for entire weeks—figure as ‘epileptic mania’ in our asylum records, although *moria*-like symptoms and genuine exaltation be entirely out of the question.”

The paper then gives the account of two cases, interesting as well in a medico-legal as in a pathological point of view, and concludes with a discussion of the subject of the civil capacity of epileptics. Dr. Spitzka points out that it is not so much the occasional attacks of epileptic mania or hallucinations that are likely to invalidate the testamentary capacity of an epileptic as the general mental depreciation, defects of memory, and loss of independency of will, and the lack of proper appreciation of acts which are often the result of long continuance of the disease.

#### IV.—NEURO-THERAPEUTICS.

*Bromide of Ethyl*.—In the *Detroit Lancet* for April, 1880, Dr. Isaac Ott publishes some experimental investigations of his own on the physiological action of the new anæsthetic, the Bromide of Ethyl. The experiments were performed on frogs and rabbits with Dubois' coil for irritating and Ludwig's electrodes. He found that the action was not a paralyzant one on the motor nerves, but that the drug possessed the power to lower somewhat the irritability of striated muscle. No reaction followed irritation of the sensory nerves in the ethylised animal, but Ott concludes that these are not directly affected, but that the paralysis is purely spinal. In his study of the reflex action he employed Türck's method of suspending the frog by a wire-holder, with its foot immersed in a solution slightly acidulated with sulphuric acid, which was immediately washed off. The cerebrum was always removed. In these experiments it appeared that ethyl depressed reflex activity as much with the higher inhibitory centres removed as with them in full action. This depression was not the result of weakened circulatory action, for the heart-pulse was still frequent and active. The bromide of ethyl first slightly increases, then decreases, the

pulse-rate in frogs. In warm-blooded animals (rabbits) it was found to increase the pulse-rate and the arterial tension—the former through stimulation, either of the accelerator nerves or the cardiac ganglia—most probably the latter, or the cardiac muscle itself; and the arterial tension seems due to stimulation, either of the spinal vasomotor centres or the peripheral vasomotor system. The rate of respiration was decidedly reduced by the drug, while its depth was increased. This effect is due, the author holds, to an action on the central ganglia, and he thinks that the danger on the side of this function from the ethyl is quite small as compared with ether. It more nearly resembles nitrous oxide, and has advantages over it in the lesser arterial tension it produces, which is less likely to be followed by cerebral trouble. The proximate cause of the anæsthesia, he holds, is a chemical action on the grey matter of the nervous system. Asphyxia plays no part in its production. Comparing it with other anæsthetics in use he concludes as follows:—

1. Chloroform increases the pulse, then slows it by a cardiac inhibitory stimulation; ether increases the pulse; nitrous oxide also increases it by paralysis of cardiac inhibitory apparatus; whilst bromide of ethyl increases the pulse by an action on the heart itself.

2. Chloroform reduces the blood-pressure by paralysis of the main vasomotor centre and cardiac debility; ether greatly increases it and keeps it increased; and nitrous oxide also increases it; bromide of ethyl increases it either by a stimulation of the spinal or peripheral vasomotor system.

3. Chloroform increases and then decreases respiration; nitrous oxide reduces it; bromide of ethyl decreases it by a central action.

The author concludes his paper in the June number of *The Detroit Lancet* with the following conclusions:—

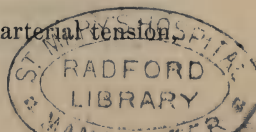
1. Bromide of ethyl, either by inhalation or subcutaneous use, kills by a toxic action on the centres of respiration.

2. That the decrease of force and frequency of the heart contributes to the paralysis of the respiratory centres.

3. That injections of ethyl into the jugular toward the heart kill by cardiac arrest, probably due to an action on the cardiac muscle.

4. Bromide of ethyl in toxic doses depresses momentarily the frequency of the heart, which is followed by a subsequent rise to normal rate.

5. Bromide of ethyl in toxic doses depresses the arterial tension.





due in major part to the depressant action of the drug upon the heart, and in minor part to a partial loss of tone of either the spinal vasomotor centres or the peripheral vasomotor system.

6. The inhibitory power of the pneumogastric is not paralysed.

*The Dosage of Electricity.*—Dr. George M. Beard, in an interesting paper read before the American Neurological Association, discusses the “dose” of electricity, the principal points of which are embraced in the following recapitulation:—

1. The therapeutical effects of electricity—stimulant, sedative, and tonic—can be obtained at either pole, and by any direction of the current, ascending, descending, diagonal, or reversed, the practical difference being of *degree* rather than of kind. This is true even of electrolysis; on the whole, the positive is the more calming, the negative the more irritating.

2. Individual exceptions, as seen in the pathological reactions of some forms of paralysis, and in certain temperaments and phases of disease, do not disprove but prove this rule. These exceptions, however, are to be respected in practice.

3. The dosage of electricity is a complex resultant of—(1) the strength of the current, (2) the length of the application, (3) the quality of the application (size of electrodes, &c.), (4) the method of application (general, central, or local), (5) the position of the poles, and (6) the temperament of the patient.

4. Attempts to prescribe electricity mathematically by the deflection of the needle of the galvanometer or by the resistance of the rheostat are unscientific and illusory. Water rheostats are, however, a practical convenience, because they enable us to avoid sudden interruptions, and to gradually increase or diminish the current.

5. The therapeutic effects of electricity are very considerably, though not entirely, of a *reflex* character. This is true not only of general and central, but of many local applications. Hence in part the mistake of carrying the laws of electrotonus into electrotherapeutics.

6. The dosage of electricity is very wide both in regard to strength and length of application. Although the sensitiveness of the patient is the best guide, yet in some cases currents that can scarcely be felt, and applications of but a moment's duration, are required; while in other cases quite painful currents or applications prolonged for hours may be useful.

*The Treatment of Sea Sickness.*—Dr. Beard, in his little *brochure*

on "Sea Sickness," strongly recommends the bromide of sodium, both as a preventive to the occurrence of the malady and as a curative agent in the early stages, when it will often break up an attack. He states that the bromide as a preventive should be taken in doses of from thirty to sixty and ninety grains, three times a day, three or four days before starting, and adds that there are few persons so sensitive that they cannot take large doses of this drug freely diluted. If bromide of sodium cannot be had, then he would use the potassic salt or the bromides of ammonia and calcium, or combinations of them, but to produce the desired results large doses are imperatively necessary. In cases where the bromides have not been taken, or at least not taken in sufficient quantities to cause bromisation, then the hypodermic injections of solution of atropia in doses from the one two-hundredth to the twenty-fifth of a grain, pushed to the extent of producing *great dryness of the throat*, have the effect of diminishing and finally of checking the vomiting and nausea, and allowing the stomach to retain food. Citrate of caffein and cannabis indica are also recommended for trial.

*The Treatment of Hemianæsthesia and Hemiplegia with Magnets.*—M. Debove, in a paper read before the Medical Society of the Hospitals, Paris, recalled briefly the facts already published upon the relations of hemianæsthesia with hemiplegia, and upon their cure by the application of magnets. In all these facts it is only a question of hemianæsthesia and of the influence of magnets on the return of sensibility. No observers make mention of the influence of magnets upon motility, and M. Debove himself, in a preceding communication, has not thought proper to enter upon this question before having collected other facts in support of that which he had established at first. These facts he has now obtained and presents to the Society. In all his observations M. Debove has determined with care the condition of motility; it is within bounds to assert that the influence of magnets is exerted upon hemiplegia at the same time and to the same extent as upon hemianæsthesia. The author repeats with details the observation communicated previously by him to the Society, and cites five others, of which three may be summed up as follows:—

1. He treated a man having had several returns of epileptic attacks, who had fallen on the public street and was carried into the ward of M. Debove. He presented a hemianæsthesia with complete hemiplegia. One application of a magnet caused to dis-

appear not only the hemianæsthesia, but also the hemiplegia. The patient left the hospital next day, limping a little it is true, but able to walk without support, and having recovered all the strength of his arm. [The result in this case would have been probably the same without the influence of the magnet, as it was clearly one of post-epileptic hemiplegia resulting from the paralysing effect of the "discharging" lesion.—*Rep.*]

2. A patient affected with hemiplegia of a syphilitic origin was treated by iodide of potassium in the service of M. Fournier, and discharged cured after several months' sojourn. A month ago this patient awoke affected on the left side with complete hemiplegia and hemianæsthesia, with loss of sight on the affected side. Application of a magnet upon the arm for an hour without results; continued application of a magnet during twenty-four hours; the symptoms cease, but in the arm alone; the same application for twenty-four hours to the leg was followed by recovery limited to the limb touched by the magnet; a third application, practised this time upon the face, re-established the sight, and effected a complete cure.

3. He treated a patient of M. Proust; the application of a magnet had caused the symptoms to disappear only momentarily. This patient entered the service of M. Debove with hemianæsthesia and hemiplegia. An application for half an hour gave, as with M. Proust, only momentarily relief; a continuous application for twenty-four hours was made and gave complete success. Besides, M. Debove has two analogous observations which M. Vigoroux has communicated to him; in both cases there was recovery.—(*Alienist and Neurologist.*)

In a case of hysterical hemianæsthesia with hemiplegia, recorded by me in *The British Medical Journal* some little time since, the motor power was regained at the same time, and almost quite as quickly, as the sensory power under the influence of discs of zinc. As to what the nature of this influence is, either in the case of metal or magnet, opinions differ very considerably.

## PART IV.

### MEDICAL MISCELLANY.

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*Reports, Transactions, and Scientific Intelligence.*

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#### TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

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SESSION 1880-81.

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GEORGE JOHNSTON, M.D., President.

ALEXANDER NIXON MONTGOMERY, M.K.Q.C.P., Honorary Secretary.

*Wednesday, December 1, 1880.*

DR. GEORGE JOHNSTON, President, in the Chair.

*The Late Dr. Alfred Hudson.*

DR. M'CLINTOCK asked permission to move a resolution of a kind which afforded him much pain and at the same time some gratification. He felt pain because the occasion of moving the resolution was the death of one with whom he had had an intimate acquaintance for over fifteen years, and to whose kindness and skill he was indebted, he might almost say, for the preservation of his own life on more than one occasion, and who had enjoyed the confidence not merely of his professional brethren, but of the public at large. Having regard to his eminence in his profession, his straightforward, manly and gentlemanlike conduct and principles, and his liberal openhanded generosity on various occasions, it afforded him (Dr. M'Clintock) a degree of melancholy satisfaction in being permitted to pay a tribute to the memory of one so justly respected and esteemed as was Dr. Alfred Hudson. It would be perhaps out of place there were he to attempt to sketch even the merest outline of his character and abilities, and of the causes that led to his extraordinary success in his profession. He was sure that full justice would be done to his character and his life at no distant day by some one more competent than he was to undertake such a task. He would content himself by moving the following resolution:—

“RESOLVED—That this Society desires to record with sincere regret the lamented death of Dr. Alfred Hudson, ex-President of the King and



Queen's College of Physicians and of this Society, and Regius Professor of Medicine in the University of Dublin. At the same time the members of the Society would give expression to their respect for the talents, the honourable principles, and the many excellent qualities of their departed *confrère*, who, as a physician, enjoyed the confidence alike of the profession and the public, and as a high-minded, cultivated gentleman and generous benefactor, possessed the esteem of all who knew him. That copies of this resolution, together with the warm sympathy of the Society, be conveyed through our Honorary Secretary to the widow and brother of the deceased gentleman."

DR. J. W. MOORE said: he felt much gratification that the privilege had been accorded to him of seconding the resolution. He did so as an old pupil of Dr. Hudson, and as being now connected with the hospital where that distinguished physician had laboured for ten years of his valued life. He (Dr. Moore) never could forget his kindness to the members of the class of that institution, some of whom were at present in the room, and many of whom owed to him much of the success in life that they afterwards attained. Dr. Hudson's unvarying kindness was fresh in the memory of every member of the Society.

The PRESIDENT said that, in accordance with the usual practice on such occasions, the resolution should be passed in silence.

*Notes of a case of Acute Eczema presenting some Peculiarities.* By J. MAGEE FINNY, M.D., Univ. Dubl.; F.K.Q.C.P.I.; Physician and Dermatologist to the City of Dublin Hospital.

ECZEMA is such a very common disease of the skin, and with its protean forms every physician is necessarily so familiar, that to introduce such a theme to this Society as something novel or startling would be, on my part, an act alike of temerity and of inexcusable effrontery.

As, however, the following case of acute general eczema, which shall illustrate any remarks I may make, exhibited some unusual features in the mode and distribution of the eruption, and as I believe the more freely an interchange of thought and experience among the members of our Society on matters of common interest can be encouraged the more profitable and interesting will our meetings prove, I have deemed the subject not unworthy of short notice:—

Charles W., aged forty-four, married, in comfortable circumstances, and living a regular life, came under my care in July last suffering from an attack of eczema of about a month's duration.

The patient is a large, full man, weighing over 13 stone, with a tendency to corpulence, fair-haired, and of a delicate white skin, covered with but little hair. He has always been healthy, and has never had kidney troubles, gout, rheumatism, or syphilis. His occupation—that of

a seedsman—does not expose him to any of the usual causes, which, when acting as irritants on a delicate skin, may induce local eczema.

His own account of his present attack was as follows:—Six weeks before he came under my care he had been suddenly attacked while in his ordinary health with rigors. He became so ill as to necessitate his being confined to bed for a couple of days, and for four days he did not feel quite himself. The febrile attack was unaccompanied by vomiting, dorsal pain, sore throat, or any eruption, and it disappeared by profuse perspiration. A fortnight after this attack, which was presumably one of simple continued fever, the eczema made its appearance in his ears, face, and scalp. A friend of his, who had been a former patient of mine, and who had derived the greatest benefit from the use of phosphorus in chronic eczema of the hands, recognising the disease, recommended Charles W. to take a course of phosphorus, and suggested Kirby's pill No. IX.

As might be expected, after a treatment not suitable to every case of eczema, instead of improvement the opposite was the result, and, like all other folk who greedily avail themselves of remedies when suggested by a non-professional person, and who, when the expected benefit has not shown itself, invariably blame their advisers to the exclusion of their own credulity, my patient remarked to me his belief that the phosphorus did him no good, but that it drove out the disease, and made the eruption more profuse and universal.

The following was his condition when first seen on the 10th July:—The whole hairy *scalp* was swollen and red, and thickly covered with minute small vesiculo-pustules, mostly discrete. There was an absence of exudation, and, consequently, of the matting of the hair, so usual in eczema attacking this part. On combing or scratching, a number of minute branny scales were shed. The *ears* were greatly involved, and stood out from the head, thick, rigid, and with the skin covering them so stretched by subjacent infiltration as to be immovable. They were covered, especially along the helix and over the lobule with immense numbers of minute vesicles, which exuded a very viscid, yellowish, gum-like fluid, in parts forming drops and in parts yellowish crusts, between which were several cracks or fissures. The skin of the backs of the ears and the adjoining portions of the neck were also red and oozing, while the rest of the neck was of a deep red colour, but unassociated with either exudation or squamation.

The *face* was, comparatively speaking, but slightly affected, and the eruption did not present the characters so commonly seen in eczema faciei of the impetiginous or pustular type. In place of the yellow or olive coloured honey-like masses (“*melitagra*” and “*crusta lactea*” of authors), it was unaccompanied with any kind of exudation whatever, and in this respect contrasted strongly with the eruption of the ears.

The lower half of the face entirely escaped, and of the upper half only the forehead and eyelids were engaged, although the whole face was puffed and fuller looking than natural. The eyelids were covered with very minute scales, and puffy, though differing from ordinary œdema, and presented none of the glazy, shining surface produced by extreme tension. The forehead close to the scalp was red and squamous, but elsewhere was mapped out with maculæ of a bluish-red colour of the size of sixpence. These discoloured spots did not disappear on pressure, nor were they raised or coloured with vesicles or scales.

On the *trunk* spots of a similar character, but of a larger size, equal to that of half-a-crown, were to be seen below the breasts and over the hypochondria, preserving roughly the symmetry which obtains in eczema. A few similar spots, the size of a shilling, were also met with on the upper part of the thigh. These discolorations in some places were uniform, and in others they were bluish-red at the outer edges, where insensibly the natural flesh tint was resumed, while their centre was more distinctly red, owing to a number of small reddish papules crowded together. Though I searched very carefully, both at the first visit and subsequently, I never detected a vesicle nor the slightest exudation. When pinched up the skin was indurated, and later on in the course of the disease it was covered in these spots with squamæ of a branny nature. The *hands* also were attacked, the eruption being confined to the backs of the wrists and fingers, the palms being free. As is usual in eczema digitorum the vesicles were extremely minute, and the affected parts unaltered in colour.

The patient made considerable complaint of the tingling and itching of the hands and scalp. His tongue was indented and covered with prominent red papillæ at the tip. Though neither a drinker nor smoker there was follicular pharyngitis. The urine was scanty, but free from albumen.

The progress of the case was shortly this :—Seen after a week's treatment there was little or no improvement to be noted except of the scalp and hands. On July 24th the face was reported improved, the staining much less marked; but on the trunk the spots have become much larger, and where two adjoining patches united, large areas of two square inches were seen; and several new discolorations have appeared over the thighs and legs; no change, except slight scaliness, being noted on the older spots. Special interest lay in the hands and fingers. Here the eczema seemed completely cured, and now desquamation of a character, very unusual in eczema, was taking place. Along the ulnar edge of the palm the epidermic scales stood out semi-detached, while over the palm, fingers, dorsum, and wrists, the cuticle was raised in little circular spots, whence it could be peeled off in fragments of quarter to half an inch in size, leaving under it healthy skin of a normal colour. These scales, so

far as could be judged without the microscope, were epidermic, and were not either crusts or scabs. It should be remembered that the palms had not been attacked by eczema. The desquamation was completed in five or six days.

From this date improvement became still more marked and rapid, and on 14th August the only evidence of the disease was a slight thickness and roughness of the ears and the stains on the legs. The patient remained under observation for another month without any relapse, and when seen on September 18th, nothing abnormal was to be discovered, except a deep bluish-red, painless, smooth stain about the internal malleolus of either foot.

The treatment consisted in regulating the diet so as to avoid all alcoholic and fermented drinks and the excess of animal food, and in calling the kidneys into action. The medicinal treatment was both local and constitutional. The latter included a combination of iodide of potassium in 3–5 grain doses, liquor arsenicalis 5 m, with alkalies and colchicum in infusion of juniper. This mixture was steadily persevered in for over a month, and then, with the exception of the iodide (which, owing to its producing a troublesome acne-form rash, was withdrawn) it was taken for another month. It agreed well, improving the general tone and imparting vigour. The local treatment found to answer best for the scalp was a linctus of equal parts of olive oil, glycerine of borax, and glycerine of tannin. This was continued for some weeks, and then the last vestige of the disease was removed by the ung. hydrarg. ammoniat.

Oleate of zinc and vaseline, in the proportion of two parts to one, with a few minims of chloroform added, so long as itching was a prominent symptom, following on an ointment of nitrat. bismuthi (3 j. ad. 3 j. vaselini), was the only application used for the ears, face, hands, &c., and to the oleate of zinc I attributed the best results. It is a preparation which I have extensively used, and always with the happiest consequences.

Warm size-baths once or twice a week, in which the patient lay at full length for an hour at a time, gave great relief in allaying the terrible tingling and itching which attended the disease in its earlier stages.

*Remarks.*—The foregoing case presents, I consider, some features of interest, and suggests one or two questions not perhaps readily answerable. Was the initial rigor, which preceded by a fortnight the appearance of the eruption, the beginning of the eczema (as the patient imagined), or did it stand in the position of an exciting cause, or was the febricula but a coincidence? From the analogy of eczema being so frequently developed (not produced) in scrofulous children by the slight febrile disturbance attendant on vaccination, I consider the attack of simple continued fever acted in this case as a predisponent and exciting cause of the eczema by its general depressant effect, and by the determination to the skin which the diaphoresis induced.



Again, what produced the desquamation of the hands which occurred six weeks after the first appearance of the eruption and a fortnight's treatment? Was it due entirely to the local eruption, to the initial fever of eight weeks ago, or to both causes? Here I confess I can suggest no satisfactory solution, for it was unlike the scaliness which occurs in several varieties of eczema, and it was not limited to the parts attacked. It exactly resembled the desquamation following a mild case of scarlet fever. It occurred to me, and it may perhaps occur to some, that it was a variety of pityriasis rubra (dermatitis exfoliativa), but it had no features in common with that disease; and as I had a case of that rare complaint under my care at that very time in hospital, I was the better enabled to note the points of difference.

Another peculiar feature of this case to which I would direct attention was the manner in which the eruption appeared on the trunk and lower extremities, and the unusual appearance and characters it presented in these localities. It is very uncommon, at least I have found it so—(1) to see eczema first attack these parts of the body in patches of the size of half to two inches in diameter; to notice (2) these patches to come out in regular order, beginning above and extending down to the ankle; and to note lastly, that the eruption, so prominently vesicular in other places, should at no time ever reach the stage of vesiculation. They were, in truth, infiltrated inflammations of the skin followed by slight squamation, resembling in appearance, and yet differing in character from, erythema, and exemplified the truth of the observation of Dr. Liveing, that in the diagnosis of eczema it is necessary to bear in mind not only the different forms assumed by the disease in its various stages of development, but also that it may be arrested in its progress at any one of its stages without passing through all its usual phases, and that it may abort at a very early period.

As there can, in my opinion, be no reasonable doubt of the correctness of the diagnosis that the patient was suffering from but one disease, and that disease was eczema of an acute or subacute form, so must we fain view the unusual course and anomalous appearances it presented as but fresh evidences of the polymorphism assumed by this troublesome and common disease.

DR. WALTER SMITH observed that the diagnosis in the case was beyond question. The co-existence of the dry, scaly patches on the trunk with the vesicular form of eczema elsewhere on the body was far from rare, and was only to be expected from the natural history of the disease. It was the exception in cases of eczema affecting the head, neck, ears, and arms not to find some dry erythematous and psoriasis-looking patches on the body. Dr. Finny had adverted to the circumstance of desquamation on the palms of the hands, although there were

no inflammatory appearances. That was a very common condition when eczema attacked the backs of the hands; it was quite common to find a scaly, branny desquamation on the front of the hands, but on looking carefully they would see a distinct pink redness underneath the surface. The explanation was that there was a thick skin on the hand, and when there was inflammation affecting it only two effects were produced—namely, a slight redness which might escape notice, and such an alteration in the nutrition of the epidermis that it would be thrown off in scales, but the disease was the same. It was analogous to what occurred in smallpox, where the pustules and vesicles on the palms of the hands were in the early stage of the disease almost concealed from view by the thick epidermis, especially if the patient happened to have a horny hand. He would suggest to Dr. Finny to try the hydropathic treatment or “wet pack” with the next case which presented itself. He (Dr. Smith) had found it very useful and effectual in dispersing the eruption.

DR. HENRY KENNEDY said there was a therapeutic point in the case which deserved more attention than it had received. Where arsenic or phosphorus was given for the disease it was by no means uncommon to find that the first result was to make the disease worse. That was an almost certain indication that the disease was under control. The treatment might afterwards be modified and the dose limited. Another point which had been alluded to was the desquamation on the hands where there was supposed to be no eczematous disease. He had seen epidemics of fever in which desquamation occurred quite commonly, just as in scarlatina. In the present case he thought the fever which the patient had explained the desquamation on the hands. If there had been any disease such as Dr. Smith supposed existing on the palms of the hands it would have been seen by the author of the paper, whereas he expressly stated that the skin seemed to be perfectly healthy.

DR. HARVEY asked at what period the desquamation on the palms of the hands was noticed?

DR. FINNY, in reply, stated that the desquamation was not noticed until eight weeks after the initial rigor and five weeks from the beginning of the eczema. Dr. Kennedy had answered Dr. Smith by saying that there was no disease in the palms of the hands. He (Dr. Finny) was familiar with eczema on the backs of the wrist and of the fingers, where it was not always easily recognised, and entirely consisted of scalliness. There was no disease on this man's palms, or even on the tips of his fingers where eczema digitorum was often first seen. It was not until the fourteenth day of treatment that the general desquamation of the backs of the fingers, wrists, and palms of the hands occurred, and in the latter place pieces of epidermis of all sizes came off. Dr. Kennedy's explanation of the case came nearest to his own. In cases where the hands were treated with long immersion in water, what

occurred might be understood, but nothing was applied to the palms of the hands which could have induced the appearances. The wet pack was not unfamiliar to him; he considered it to be a most valuable remedy in the dry form, which occurred chiefly on the wrists and hands, but he did not think it would have suited this case, where there was no infiltration or thickening, and the disease responded well to the treatment given. Dr. Smith had not quite taken up what he had said as to the patches on the trunk and limbs. They were at no time scaly or psoriasis-like, and but very slightly branny, and at the end they were perfectly smooth and shining. It had struck him as unusual that when the rest of the body was improving these should have come on and extended from above downwards. He considered that they were all parts of the eczema, and he was of the opinion expressed by Liveing that the disease in these situations was abortive.

*Enteric Fever in South-eastern Africa.*

SURGEON-MAJOR JACKSON read a paper on "Enteric Fever and its Modifications by Malaria in South Eastern Africa." [It will be found at page 17.]

DR. HENRY KENNEDY observed that where a disease like typhoid could be modified in so marked a manner by malarial poison, it showed what need they had for caution in dealing with such diseases. In diagnosing typhoid fever, he would be sorry to be guided altogether by thermometry. He would look more to the general symptoms—the existence of spots, the prevalence of diarrhoea, and so on. If the thermometer marked only 98·9°, he certainly would not, therefore, conclude that the case was not typhoid. The bodily temperature, as indicated by the thermometer, was as liable to mislead as any other single symptom of the disease. A military medical gentleman, Surgeon-Major Gordon, had lately published in the *Medical Press and Circular* a series of most valuable cases showing the extraordinary phases through which typhoid fever passed in India. The fact mentioned by Surgeon-Major Jackson of the spread of the disease to the lower animals was very interesting. He (Dr. Kennedy) recollected reading, in reference to an outbreak of cholera in India, that every living animal seemed to be affected by it, various domestic animals being killed.

DR. FINNY said that Surgeon-Major Jackson's remark as to the long persistence of the remittent taint in the system was particularly deserving of consideration. He believed in the identity of remittent and intermittent fever. The late Dr. Stokes laid it down that once a man got intermittent fever it followed him through the whole course of his life and modified any other illness that he got. Some months ago they had an old soldier in the City of Dublin Hospital for aneurism. Ten years previously he had got an attack of ague in India; and after he had been



two months in hospital the ague attacked him again, and ran his pulse up from 74 to 126, with imminent danger to the aneurismal sac. He did not think the thermometer ought to be tabooed in enteric fever. He believed, on the contrary, that no indication of that disease was so valuable as that afforded by the thermometer. The pulse in enteric fever was fallacious, and gave very little help, while the temperature gave very great help, but the reverse was the case in pneumonic fever. He did not say that the temperature was the best guide in all cases of enteric fever, but in ordinary cases it was the best guide, and showed whether the patient was really recovering or a relapse was coming on.

SURGEON-MAJOR JACKSON, in reply, said: Dr. Finny must allow him to differ with him on one point—namely, as to intermittent fever and remittent fever being subdivisions of the same disease. He had seen a great deal of intermittent fever, and he had not seen a single case of remittent fever terminating in it. In remittent fever the liver and the pyloric viscera were chiefly affected, whereas the spleen chiefly suffered in the intermittent type. Quinine was a specific for intermittent, but not at all for remittent fever.

*Brief Note on Typhus Fever in Graves' Disease.* By ARTHUR WYNNE FOOT, M.D., Univ. Dubl.; Physician to the Meath Hospital.

GRAVES' disease has been not inaptly described as a pseudo-pyrexia, principally on account of the habitual rapidity of the pulse. This is owing to the fact that before the development of thermometrical measurements the rapidity of the pulse was especially relied on in the study of fever. Now, however, since increased temperature of the body is a necessary symptom of fever—since it is held that where it is absent fever does not exist—the rapidity of the pulse has assumed a subordinate position in the estimate of fever.

The patient to whom this note refers had been nine weeks and four days in hospital for exophthalmic goitre, and had very much improved—in fact, arrangements for her return home were being made—when she contracted typhus.

On Friday, 15th of October, 1880, she had a headache and could not eat. In the afternoon of the same day she got a rigor, which continued through the night, and was attended with a rise of temperature from 98° to 104° Fahr., and an increase in the rate of her pulse. Her pulse had hitherto presented the increased rate noticed in Graves' disease. 101 observations had been made on it before the invasion of the fever, and its mean average rate had been determined to be 129. On this evening (15th) it rose to 145. On the sixth day after the initial rigor a copious typhus rash made its appearance on the trunk, with a morning temperature of 105° Fahr.

On the evening and night of the ninth day she was delirious, and



frequently got out of bed and sat over the fire, when she presented a strange and startling appearance, her incoherent ravings and delirious excitement heightening the effect produced by her large, rolling eyes and dishevelled hair. On the tenth day she suffered greatly from dysphagia—in fact, the nurse thought she would be choked. This seemed to arise more from acute congestion of the thyroid gland than from nervous disturbance of the muscles of deglutition. The pulse at this time ranged from 164 to 180. She was given draughts every two hours containing drachm doses of tincture of digitalis, after several of which the difficulty of swallowing was much diminished—according to the nurse's opinion “the draughts saved her life”—and she was able to get down a fair share of nourishment—viz., four ounces of whisky and two eggs made with milk into ten ounces of egg-flip, a pint of beef-tea, and three pints of milk. These full doses of digitalis, however, did not lessen the rapidity of the heart's action or improve the character of the radial pulse, which was so flickering and uncertain that, on this account, and, owing to the *subsultus tendinum*, the rate of the circulation was habitually estimated at the heart with the stethoscope, instead of at the wrist. At 11 p.m. on the eleventh day she had an attack of convulsions for ten minutes, and similar attacks recurred every half hour till her death in the forenoon of the following day. Her death took place in the early part of the twelfth day.

The digitalis draughts had been discontinued twenty-four hours before the convulsions came on, and she was not taking them at the time.

Subjoined is a tabular statement of the temperature and pulse, from which it may be seen that the average morning temp. was  $103\cdot6^{\circ}$  F.; the average evening temp.,  $104\cdot3^{\circ}$  F.; the mean average daily temp. (twenty-six observations) was  $104^{\circ}$  F. The average rate of the pulse in the forenoon was 138; in the afternoon, 132; and the mean average daily rate (twenty-five observations) was 135:—

Day	Temperature		Pulse	
	M.	E.	M.	E.
	°	°		
1	98	104	120	145
2	101·2	104	134	120
3	103	104	114	116
4	103	104·6	120	135
5	104·6	104·8	128	113
6	105	104·8	125	134
7	105·1	105	133	134
8	105	105·2	140	150
9	103·5	104·1	140	160
10	103·3	104	164	180
11	103·2	103·6	180	102
12	—	—	—	—

# PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

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## FORTY-THIRD ANNUAL SESSION.

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JOHN A. BYRNE, M.B., President.

WILLIAM ROE, M.D., Honorary Secretary.

*Saturday, December 11, 1880.*

DR. JOHN A. BYRNE, President, in the Chair.

### *Exhibition of Specimens.*

DR. WALTER G. SMITH exhibited a recent specimen taken from a married woman, aged sixty-two years. The specimen illustrated the association of a large intra-mural fibroid with malignant disease of peritoneum.

DR. ATTHILL exhibited a fibrous tumour which had induced inversion of the uterus. He said that this was the second case of a similar kind he had an opportunity of laying before the Society. The patient was an unmarried woman, aged about forty-five. The history was one of long-continued dysmenorrhœa and menorrhagia, and, latterly, of almost constant uterine hæmorrhage; but from the time when this latter condition occurred, two years ago, the pain ceased. He therefore concluded that the cessation of pain marked the occurrence of the inversion.

The case was admitted into the Rotunda Hospital as one of polypus of the uterus; but on a careful examination under chloroform he satisfied himself that it was one of inversion of the uterus, and not of polypus, and that the inversion was due to the presence of a fibrous tumour the size of an egg, which was attached to the fundus. He detached this tumour by enucleation. No hæmorrhage followed. He intended to attempt reposition of the inverted uterus in a few days.

DR. ATTHILL also exhibited a specimen of an unilocular cyst which he had removed by the operation of ovariectomy a few days since in the Rotunda Hospital.

The operation was free from all difficulties, and was performed with strict antiseptic precautions. Nevertheless peritonitis supervened within a few hours after the operation, and proved fatal.

*On Herpes (Hydroa) Gestationis.* By WALTER G. SMITH, M.D.; Vice President of the King and Queen's College of Physicians, Ireland; Physician and Pathologist to the Adelaide Hospital.

THE members of this Society will doubtless recollect that in the course of last Session Dr. Kidd made an interesting communication upon the occurrence of certain eruptions of the skin in ætiological connexion with the uterus, chiefly during the periods of pregnancy and parturition. Dr. Kidd was of opinion that a reflex erythema or roseola appeared in about 3 per cent. of the obstetric cases in his practice. As a supplement to his paper, I propose, by permission of your Council, to communicate to the Society this evening a case of an affection which is likewise intimately connected, as its title implies, with the physiological condition of pregnancy, but, unlike erythema uterinum, it is one of considerable rarity, and comparatively few cases of it have been recorded. I do not know of any case having been as yet reported from Ireland, and as a physician—one who does not practice obstetrics—I must crave your indulgence for bringing the subject before this audience, which I do in the hope that my case may bring to mind, from the wide experience of some of my hearers, the memory of parallel cases.

CASE.—Mrs. F., aged thirty-five years, the wife of a fisherman at Greystones, was sent to me for advice in June, 1880. As a rule she had enjoyed good health, and had been married for thirteen years, during which time she experienced two miscarriages and seven full-term pregnancies. Four of her children are living, and at the time I saw her she was nursing her seventh child. Five years ago, while pregnant of her third child, and about six months gone, an eruption, similar to that for which she now sought advice, appeared “like ringworm” round the umbilicus. It spread rapidly over the body and limbs, but the face was spared. The affection persisted during gestation, and for two months subsequently, when it gradually disappeared, apparently uninfluenced by the medical treatment she received. The skin affection was accompanied by intense irritation, itching, and burning “more than anything.”

With the exception of occasionally suffering from “hives,” when she ate fish, she had never previously been the subject of any form of skin disease. She remained perfectly free from any cutaneous trouble up to October, 1879, when, being three months pregnant of her seventh child, the eruption reappeared around the umbilicus in exactly the same way as the first attack—viz., as a cluster of little pimples, or vesicles. The disease rapidly extended over the legs and arms, and upon the chin.

Within the first week after parturition the eruption underwent a great aggravation, and spread over the chest and abdomen. Large vesicles and bullæ formed, some the size of a sixpence, and when punctured clear fluid spurted out with force. When the child was three months old the

affection had nearly disappeared, but a few weeks ago a relapse occurred. The following was her condition when first examined by me:—

*Right Arm.*—Numerous irregular clusters and groups of papulo-vesicles on the front of the arm, the largest patch being on the middle of the forearm. No eruption at present on the dorsal surface, but she has had the disease in that situation.

*Left Arm.*—Similarly, but not so severely, affected. Pigmentary stains of old vesicles. The fluid in the vesicles was alkaline.

*Hands.*—A few pimples on the dorsum and on the backs of the fingers. Has had the disease on the palms and soles.

After each delivery that was preceded by the eruption the *nails* fell off the hands and feet, but never on any other occasion. At present all the finger nails are marked with transverse furrows. The hair was not apparently influenced in its growth. The eruption comes out in successive crops, and each outburst is preceded by a feeling of itching and heat.

*Legs.*—Clusters of pimples along the inside of thighs and about the knees. A few scattered pimples down the legs, and some blisters on the soles of the feet. She had always noticed that the eruption is worse when she has been unable to get a sufficiency of food, or when she has been worried.

The appearances are quite unlike any form of eczema with which I am acquainted. There is not, and never has been, any evidence of a scaly or oozing surface, and the patches on the arms at once brought to mind the characters of an imperfectly developed herpes zoster, except that the vesicular groupings did not seem to follow the lines of nerve distribution.

None of her children ever contracted the disease.

She was ordered a lead lotion, containing oxide of zinc in suspension, and was directed to take a mixture of bromide of potassium and arsenic, with small doses of aconite.

When she next presented herself, towards the end of July, she expressed herself as feeling much better and stronger. The itching had been relieved by the lotion, and the eruption had disappeared from the hands and the soles of the feet. On the arms were still to be found a few papules and imperfect vesicles, which looked and felt like the first stage of a variolous eruption, and the legs also exhibited a few isolated papules and clusters, with brown stains from the preceding vesicles.

In the *American Journal of Obstetrics*, February, 1874,<sup>a</sup> Dr. Duncan Bulkley described, under the title "*Herpes gestationis*"—a term adopted from Mr. Milton—"a rare affection of the skin, peculiar to pregnancy," and which differs materially from the forms of vesicular disease commonly admitted. Although the disease had been recognised and described

<sup>a</sup> See abstracts of Dr. Bulkley's paper in *Irish Hospital Gazette*, 15 March, 1875, p. 91; and in *Archives of Dermatology*, Oct., 1874.



under different names<sup>a</sup> by several writers from the year 1840, yet in 1873 Dr. Bulkley could find in medical literature but eight other cases in addition to his own. Since that date a few other similar cases have been published—*e.g.*, one by Dr. R. Liveing (*Handbook of Diagnosis of Skin Diseases*, 1878, p. 80), who gives a good summary of the essential features of the disease, and one by Mr. Wyndham Cottle (*St. George's Hospital Reports*, 1879, p. 627), who also briefly refers to two or three additional instances. So that, including my own case, there are about fifteen cases of this curious affection on record. In its characteristic features the case described above agrees with those ascribed to the disease by the authors already referred to.

The dependence of the eruption in the case of Mrs. F. upon the gravid state of the uterus is indicated by its occurrence, in almost identical form, during two pregnancies. It is noteworthy that between the first and second outbreaks of the disease three pregnancies intervened without the appearance of any skin affection. The cutaneous manifestations of itching, burning, and intolerable irritation, accompanied by the development of papules, vesicles, and bullæ, in clusters, yet not over definite nerve-areas, harmonise with the descriptions of authors, and the clinical aspects of the eruption quite precluded confounding it with any form of eczema. Furthermore, the eruption left behind it dark pigmentary stains, it underwent a sudden aggravation a few days after delivery, and again some months later, and very slowly retrograded, without seemingly being much influenced by medicinal treatment.

*Placenta Prævia, with Hydrocephalus.* By ARTHUR V. MACAN,  
M.B. & Ch.M., Univ. Dubl.

CASES of placenta prævia are happily of rare occurrence, and it is but seldom that hydrocephalus proves an actual hindrance to delivery. I therefore think the following case, in which both these conditions were combined (and for being able to report which I am indebted to my friend, Dr. Bennett, of Sandymount), may, on this account, prove of some interest to the members of the Society—besides involving some questions of diagnosis and treatment on which I would be glad to elicit the opinions of the older members of the Society who may be present.

CASE.—Mrs. K., aged about forty, the mother of ten children, was taken in labour about 8 p.m. on November 25th, 1880. Had had a violent attack of hæmorrhage three months since, and again about a fortnight ago. Her husband states that for more than a fortnight she has been looking wretched, and that he often thought she was dying, but she never complained until the day her labour came on. She had had no

<sup>a</sup> Pemphigus pruriginosus (Chausit Hardy), Herpes circinatus bullosus (Erasmus Wilson), Pemphigus hystericus? (Hebra), Hydroa gestationis (R. Liveing).

trouble of any sort with her former children. Labour was accompanied with violent hæmorrhage; the people round her did not, however, call the midwife till 11 o'clock, and she found the woman so bad that she at once sent for Dr. Bennett, who accordingly saw her about 11 30 p.m., and found her in a state of collapse, the whole floor of the room being a pool of blood. He at once sent for me, and I saw the woman at about 12 45 a.m. She was then lying on her side in bed, moaning, her face dead white, her pulse about 120 and very compressible. On placing the hand over the fundus I found it hard and intensely tender to the touch, so much so that I desisted from any further external examination. Very little blood, indeed, was flowing externally. On making an examination I found the vagina filled with clots, and having removed them, I was able to feel the os high up, about the size of a crown piece, the edges thin and dilatable, and completely covered by the placenta. There was, however, an appreciable distance between the internal surface of the cervix and the lower surface of the placenta, and at no point that I could reach was the placenta adherent to the cervix. No presentation could be felt through the placenta, nor did any hæmorrhage follow the examination.

After consultation with Dr. Bennett, I determined to turn, as the edges of the os were thin and dilatable.

With difficulty some whisky was obtained, as it was after hours, and I got the woman, with great persuasion, to swallow a small quantity of hot punch. I was the less concerned about this as I had a bottle of sulphuric ether with me, and Dr. Bennett having injected about four syringefuls, I proceeded to turn. I experienced no difficulty in getting my hand through the cervix, but, on trying to pass it upwards and to the left, I found the placenta still attached to this side. I therefore changed the direction to the right, and at once arrived at the membranes, without having had to detach a particle more of the placenta. The right knee was found and brought down without difficulty, and as the hand was withdrawn from the vulva a very small amount of liquor amnii escaped, which was hardly more than tinged with blood. There was some delay before the head slipped upwards into the fundus, so that I was just about to aid it by external pressure when I felt the obstruction give way and the foot came down outside the vulvæ. The leg was apparently that of a tolerably well-developed fœtus, and moderate traction on it brought the umbilicus outside the vulvæ. Here, however, I found some difficulty, which I set down to the arms being extended above the head. It was with very great difficulty that I got down the arms, though I made steady traction on the breech, and Dr. Bennett assisted my efforts by firm pressure over the fundus. At last I succeeded; but when I endeavoured to extract the head my utmost efforts were unavailing. Several times I renewed my endeavours, making powerful traction with the

fingers of the right hand hooked over the back of the neck, and the two first fingers of the left hand making traction on the lower jaw—Dr. Bennett aiding me by pressing as hard as he could over the fundus. But all in vain. I need hardly say that at no time did I hope or expect to deliver the child alive; but the knowledge that the woman had borne ten children previously without difficulty, and that my hand, when passed in to turn, had not found any symptom of pelvic narrowing, made me hesitate to use the perforator as long as there was any chance of extracting without it. However, I was at last compelled to resort to it; and no sooner were the blades separated than a gush of fluid closely resembling the liquor amnii escaped, and it was evident the case was one of hydrocephalus. The head was now extracted without difficulty, and the placenta at once followed—the uterus contracting firmly under Dr. Bennett's hand. There was really hardly any blood lost during the operation, and I quite congratulated myself on having had such a fortunate termination of the case.

Immediately after delivery Dr. Bennett again injected about four syringefuls of ether, and then put on the binder. I now found that the woman was pulseless, though she had not lost any appreciable amount of blood since I first saw her. I therefore endeavoured by every means I could think of—such as hot bricks to her feet, friction over the abdomen, and rubbing the extremities, combined with three or four more syringefuls of ether—to bring on reaction. But, in spite of our joint efforts, the woman gradually sank, and died within twenty minutes of her delivery.

The foetus, which was very fairly developed, was not weighed, but the occipito-frontal circumference of the head, even when collapsed, measured 16·5 inches.

In considering this case afterwards, the first question that occurred to me was, whether I was right in turning and delivering when I did, or would it have been better to have deferred it, and to have administered stimulants, and tried to arouse the woman first. For myself, I can hardly conceive a case where the danger of immediate operation is greater than that of a renewal of the hæmorrhage. If the case be suitable for plugging I think we may, perhaps, be justified in putting off the operation of turning, as we can command the hæmorrhage by this means. But when the case has gone on as far as this case had, I think plugging is out of the question, and hence I would, in such a case, be again inclined to turn and deliver at all risks. I must also confess that I was unprepared for the sudden collapse of this woman, without any further loss of blood, and can only explain it by her previous ill-health. But I would gladly hear the opinions of some of the members of this Society on this point.

This case, I think, also illustrates forcibly the almost imperative

necessity there is to make a careful examination of the abdomen in every case of labour. There can be little doubt that if this had been done the true nature of the obstruction would have been recognised without difficulty, and though, I think, it would have made no difference in the final result, still the woman would have been saved the additional pain and anxiety of a difficult extraction. At the same time, we must all recognise the difficulty of at once grasping the perforator without having made determined efforts at extraction.

Again, I think, the hydrocephalus could hardly have escaped my observation when passing the hand in to turn, only that the placenta was between my right hand and the head.

In reference to this point I think it would be well if it were more constantly impressed on students that when the hand is passed in to turn there are several important practical points on which we should make ourselves thoroughly acquainted before getting hold of a foot or knee. These are—first, the exact size of the brim of the pelvis; second, the exact position, size, and character of the head; and thirdly, whether there be any pulsation in the cord. The exact size of the pelvis is useful not only at the moment, but also with regard to future labours. The knowledge of the position, size, and consistence of the child's head may aid us in our efforts at turning, and in the amount of force we should exert in efforts at extraction (as in the present case) before having recourse to the perforator. And the fact of there being pulsation or not in the cord may lead us to hasten the delivery, even at some slightly increased risk to the mother, in order to save the child, or enable us to conduct a difficult extraction without having to think whether each moment's delay may not cost the child its life.

At first sight it may seem strange that my suspicion as to the nature of the case was not awakened when I found the head too large to come through the pelvis, though the child, as proved by its lower extremities, was rather below than above the average size; and the pelvis, as shown by the history of former labours, and by the hand when turning, was certainly not contracted. But having found such an anomaly as placenta prævia, I never thought of the possibility of a second complication, such as hydrocephalus, being present. Indeed, if such an idea had crossed my mind, it would at once have been allayed by the want of the ordinary characteristics of hydrocephalus when the head was felt, after turning, per vaginam; for, though the bones were quite loose and the head itself a bag of fluid, both these characteristics were quite unrecognisable when it was drawn forcibly into the brim of the pelvis and the bag of fluid thus made tense. Anyone who has seen a pelvic cystic tumour, the walls of which were very tense, will recognise the difficulty of diagnosing the presence of fluid under such circumstances; and, furthermore, it was the more solid occipital bone and mastoid process that met my finger



when I endeavoured to make an examination to find out the cause of the delay in extracting.

I regret that I did not in this case try the effect of Esmarch's bandages on the extremities—so-called auto-transfusion—as I had one with me in my bag; but the woman sank so rapidly that I was fully occupied in administering ether subcutaneously and trying to warm her limbs by friction. It seems to me we must seek for the explanation of the sudden collapse after delivery rather in the wretched state of health the patient was in previously, than in the mere loss of blood from placenta prævia, or shock due to the operation of turning.

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MASTICH IN THE TREATMENT OF UTERINE CANCER.

DR. O. JENNINGS has tried this drug, as a substitute for the Chian turpentine, in six cases of uterine cancer, and while he has, of course, been unable to effect a cure, the treatment was nevertheless, in several instances, followed by a decided improvement in the general condition of the patients. The drug (turpentine of *Pistacia lentiscus*) was administered in connexion with flowers of sulphur, and in the form of pills, the proportion being six parts of the turpentine to four of the sulphur. Eight pills, each one containing 15 centigrammes of the turpentine, were given as a daily dose. In the first case, after ten days of such treatment, the local signs were but slightly changed; still there was a marked improvement in the patient's general health, the appetite was better, and the vaginal discharge had considerably diminished. The existing painfulness in the lumbar and hypogastric regions was also much lessened. In the second, the drug caused some initial vomiting, but tolerance was soon established. Here, also, the patient was notably improved. In the third case, the improvement was still more marked, so that the patient insisted on leaving the hospital, being now in a condition of absolute painlessness, whereas on admission she had suffered intensely. In the fourth case, the pains were not controlled, but the discharge diminished during the administration of the drug. The fifth case showed no local amelioration after one month's trial of the turpentine, though the general health of the patient continued to be satisfactory during all this time. In the sixth and last case the drug increased the already existing tendency to vomit, and after one week she refused to continue with the medicine. There was no improvement. Finally, the writer says that these trials certainly had encouraging results, and in view of the difficulty of obtaining pure Chian turpentine, ordinary mastich deserved to be further tried.—*La Tribune médicale*, Aug. 15, 1880, and *N. Y. Med. Record*, Nov. 6.



## PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—ARTHUR WYNNE FOOT, M.D.

Secretary—E. H. BENNETT, M.D.

*Croupous Pneumonia.*—The PRESIDENT (DR. A. W. FOOT) laid before the Society a well-marked specimen of croupous pneumonia, involving the whole right lung. The parts also exhibited an aneurism of the descending portion of the thoracic aorta, the sack of which had had for its posterior wall the bodies of the vertebræ. The amount of exudation in the right lung was ascertained to be 29 ounces, or a little over  $1\frac{3}{4}$  lbs.

A few words about the life-history of the case were necessary, and it would be sufficient to state that he was a man of forty-nine years of age, and, by his own admission, of intemperate habits—drinking systematically every Saturday night. This custom had been telling on his health for the last two years, though, on admission to hospital (2nd Nov., 1880), he said he had “been bad only a week.” The condition of his right lung was recognised at once by the clinical clerk of his ward, Mr. Archer, who drew his (Dr. Foot’s) attention to the implication of the extreme summit. He was at once put on quinine. The expectoration was highly characteristic—very glutinous, and of the colour of orange marmalade. On the following morning (3rd Nov.) “Prognosis mala” was written on his card. This opinion was founded upon the data of his age, the situation and extent of the disease, and the previous habits of the patient, although such an unfavourable opinion did not seem to be justified by the temperature, which was  $100\cdot7^{\circ}$  F., the pulse, which was 102, or by the ratio of the respiration, which was 26. Although the case was considered a hopeless one, from a purely clinical point of view, he was put on the treatment most approved of in similar cases—two grains of sulphate of quinine and three grains of carbonate of ammonia in two pills every third hour, and equal parts of whisky and water at the same intervals. His request for some porter—his favourite beverage—was also complied with. The next morning (4th Nov.) the night nurse observed that he took a sudden change for the worse at 4 o’clock a.m., and when he (Dr. Foot) saw him, at 10 a.m., he was unconscious—temp.,  $103^{\circ}$  F.; pulse, 104; resp., 30—and in this state he remained until 2 a.m. of the following morning (5th Nov.), when he died.

At the *post mortem* examination, which was made ten hours after death, the right lung was found in the state it still presents, and which the

coloured drawing [exhibited] represents in a still more recent condition of universal solidification, the grey stage of which it had nearly all attained to from compression of the capillaries by the exudation. Increased in size, it bore the impression of the ribs on its outer aspect, was adherent at all parts to the adjacent structures, the inter-lobar fissures were obliterated, and the pleural investment universally thickened. The opposite (left) lung was in a condition of collateral hyperæmia, emphysematous along its free margins, and had considerably displaced the heart towards the right side. The whole of the thoracic aorta was diseased, but it was not until its descending portion that the vessel was expanded into a defined sac lined with laminated coagula.—*November 13, 1880.*

*Note on Vesical and Uterine Tumours in a Case of Dr. Barton's.—Bladder.*—Upon opening the bladder its wall is seen to be considerably hypertrophied, and a pouch-like but shallow diverticulum, with thinner wall, appears above and laterally to the opening of the left ureter. On the other side of the organ, externally to the opening of the right ureter, is situated a conical prolongation of mucous membrane, into which pass muscular bundles and fibrous tissue, and this forms the pedicle of a large pendulous villous growth. The tumour has grown into a more or less globose and irregular villous mass, of the usual cauliflower-like appearance, measuring some centimetres in diameter; in the unopened viscus it must have occluded its neck—and thus we have the hypertrophy of the muscular coats accounted for. The surfaces of the tumour, of its pedicle, and of the greater part of the mucous membrane of the whole bladder, are vascular, red, and inflamed, and have much the look of a chronic catarrhal condition. In places ulcerative loss of substance has taken place—for instance, in a longitudinal mesial line down the “trigone,” and in a still more marked manner in three or four patches at the base of the pedicle, of the tumour and just above. In two of these spots, indeed, the destructive process has extended quite through the muscular coat.

*Uterus.*—This is large and presents an irregular nodular outline, especially behind. On opening up the vagina by a posterior longitudinal incision, its lining membrane, although much implicated, appears normal, but the os uteri is seen to be large and patulous, and to be occluded by a movable reddish body, which, on continuing the incision and laying bare the cavity of the uterus, proves to be a sub-ovoid polypus, soft in places, 2·5 centimetres long by nearly 2 centimetres across, hanging by a narrow elongated neck from a point just below the orifice of the left Fallopian canal. The incision through the uterine wall further discloses a well-defined myomatous tumour about 2 centimetres in diameter, and situated in the posterior wall of the fundus.

*Additional Note on the Tumours in Dr. Barton's Case.—Microscopic Examination.* By P. S. ABRAHAM, F.R.C.S.I.—In the case of the

bladder, sections for minute examination were taken from the villous growth, from its pedicle, and from the neighbourhood of one of the ulcerated surfaces. All the sections show hyperplasia of the epithelium, with the surface-cells proliferating into knob-like and irregular projections. They, moreover, all show, when carefully examined, an invasion of the deeper structures by apparently epithelial cells; and in places an actual ingrowth of cells can be made out. This carcinomatous character is especially well-marked in some of the sections, through the pedicle, and in the thinner ones cut from the tumour itself. The latter, nevertheless, has at first, and on superficial examination, a very papillomatous appearance—being composed of delicate finger-like, often-branched prolongations, of which the smaller consist entirely of epithelial outgrowths, while the larger have also a fibrous and highly vascular sub-epithelial stratum. It has, indeed, only been after examination of numerous sections, and especially of those from the base of the tumour, that the diagnosis of carcinoma has been arrived at. The tumour in the wall of the uterus is a typical myoma, presenting no point of particular interest. The pedunculated growth is also in the main composed of unstriped muscle fibres; but in places there is an infiltration of suspicious cancer-looking cells, and in one part they occur in nests. Portions of it seem to be loose and of myxomatous consistence, and several mucous glands are to be seen in the sections. The covering is of columnar epithelium.—*November 13, 1880.*

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#### A HARE-LIP TROCAR AND TUBE.

AN instrument on the trocar-and-cannula principle has been devised by Surgeon-Major E. A. Fitzgerald for the operation of hare-lip. The piercing portion of the trocar is thin and round, with the point strong, sharp and somewhat spear-shaped, and made of the best steel. The tube, about two inches long, is made of coin silver, sufficiently stout so as not to bend on ordinary pressure or straining, and admits of slight expansion and contraction in its entire length, so as to fit on accurately to the trocar. When a hare-lip operation is to be performed, the edges of the fissure having been pared, the trocar, armed with a silver tube, is thrust through a quarter of an inch from the raw edges of the fissure, close under the mucous lining of the lip. This being done, the trocar is withdrawn, and the tube allowed to remain. Two tubes are sufficient for most cases of hare-lip. The margins of the fissure being brought well in apposition, a piece of strong silk or carbolised thread is twisted round each silver tube separately. Long narrow strips of sticking plaster are then passed over the lip, between the tubes and above and below them. The tubes can, as a rule, be safely withdrawn on the sixth or seventh day after the operation.



## TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

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SESSION 1879-80.

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President—PROFESSOR DILL, M.D.

Hon. Secretary—WILLIAM WHITLA, M.D.

PROFESSOR DILL, President, in the Chair.

*Notes and Remarks on the Treatment of Three Cases of Nævus.*

By J. FAGAN, F.R.C.S.I.

CASE I.—The child that has been shown to you this evening was the subject of a cellulose-cutaneous nævus of the upper lip, extending nearly its whole length in the vertical direction and about half an inch in its transverse measurement. She was brought to me some time back for treatment. The first method I tried was the subcutaneous ligature. This did not succeed in destroying the growth. I then tried setons with very little better result; it remained stationary for a time, and seemed as if it were going to shrink. However, it soon began to enlarge again; and the mother being most anxious that it should be removed, I proposed taking it away by the knife. This I did as follows:—I passed two straight needles, armed with a double-wire suture, under the base of the tumour, at right angles to the long axis, and lying parallel to each other. A hare-lip pin was next passed under its base, in the line of its long axis. They were all made to enter the sound skin about a quarter of an inch outside the margin of the tumour, and were passed deeply, so as to be felt in contact with the mucous lining of the lip. The needles and pin being left *in situ*, I threw a soft cotton thread round their exposed extremities; and while an assistant pressed the blood out of the tumour, I gradually tightened the encircling ligature, and then tied it, leaving the tumour, that was isolated by the pins, quite bloodless. I next carefully dissected out the tumour, keeping my knife in the sound skin about two lines outside its margin, and deep enough to nearly expose the needles. I next pushed the needles through, and brought the edges of the wound together by the twisted-wire suture. The hare-lip pin was withdrawn, and the encircling ligature dropped off. A pad of dry lint was placed on the wound, and strips of plaster brought over it, from cheek to cheek, to keep it in position. There was scarcely a drop of blood lost in the operation. For some reason or other the mother did not bring the child

back to me for eight or ten days, and during that time the dressing was not removed. I found the parts in a very dirty state—the sutures had ulcerated through, and there was a granulating sore about a line and a half wide in the course of the wound. This healed up in a few days. It is now about six weeks since I operated; there is not a trace of the diseased structure, and the slight scar following the operation will, I believe, be scarcely perceptible in the course of time.

CASE II.—The next case occurred to a child six months old, the tumour being of the same character as the one already described. It was seated on the centre of the cheek, and was nearly the size of a shilling. This I treated as follows:—I passed two hare-lip pins under its base, at right angles to one another, and threw a ligature round them, tying it tightly, thus completely strangulating the tumour. I did not see the case for six or seven weeks after this, as the child lived some considerable distance in the country. The mother stated that in about a week the strangulated mass dropped off, leaving an ulcerated surface which was healed in about another week. For some short time before she called on me she noticed that when the child cried the place where the sore was became very red and somewhat swollen. When I saw it it had the appearance as if there was going to be a recurrence of muscular growth. Having protected the part around the cicatrix, I freely applied to it with a glass-brush a solution of sodium ethylate in pure alcohol (3ij. of the former to 3iij. of the latter). In a fortnight she called on me again, when I applied the solution a second time, and as I found it very much improved after the first application, I told her she might not call again if there was no appearance of the redness returning. I have not seen her since, so I suppose it has kept well.

CASE III.—The third case is one in which the tumour involved half the lower lip, the angle of the mouth, and the mucous membrane covering the gums on that side. This I treated by seton as follows:—I got a large darning-needle armed with a very thick woollen thread. I passed this through the tumour, round its margin, a few lines from the healthy skin, after the manner of darning a stocking. I passed another seton through its centre in the same way. I then passed two or three through the thickness of the lip, and tied all the ends together and cut them off short. The setons were moved every day, and after a little, when free suppuration was established, and the threads became quite loose, I removed them and repeated the same process in fresh parts of the tumour. I may mention that I insisted that the parts should be kept very clean, by constant washing with linen rags saturated with a strong solution of chlorate of potassium. After the removal of the second set of setons the tumour was very much reduced in size, and what was a soft, fluctuating mass had now a feeling of consolidation. I have not seen the child for the past

two months, and if it is not already cured, I feel certain a few more similar applications of the seton will make it all right.

There are few subjects in surgery that present a greater variety in their treatment than *nævus*. There are advocates for the knife, the ligature, injections, caustics, cautery, electrolysis, vaccination, seton, and scarification, and the modifications of each of these methods are too numerous to mention.

I have given you in a very unfinished way the notes of a few cases that occurred lately in my practice. A few points in the treatment I may now briefly consider. In the first case I used the subcutaneous ligature ineffectually. I have used the subcutaneous ligature a great many times, and the conclusion I have come to regarding it is this—that it scarcely ever, if ever, accomplishes the end it is meant for—that is, the cutting off of the blood-supply to the tumour and the subsequent strangulation of it. It partakes, to my mind, more of the character of a seton, that for a few hours modifies the vascular supply, and if any good should follow its application, it is due, I believe, more to its action as a seton than a ligature.

The ligature, to be effectual, must occlude all channels by which blood can get to the tumour, and this can only be effectually done by including in it all the surrounding tissue, as I practised in the second case I have described.

The method of removing *nævus* by the knife has been practised by a great many surgeons—the objection to it being the danger likely to arise from hæmorrhage. The bloodless method I have described is a modification of that practised by Seale and Buchanan and recommended by Davy. It is, to my mind, a very simple and effectual way of getting rid of the deformity with the least amount of suffering and in the shortest time, and one not at all likely to be followed by a return of the disease.

I mentioned in the report of my second case that there was a tendency to return of the disease in the cicatrix, and that it was cured by the application of the “sodium ethylate.” We are indebted to Dr. Richardson for the introduction of this powerful caustic, which will, I believe, take the place of all the others that have been used in the treatment of this affection. It has been found very successful by those who have used it in the treatment of small *nævi*, and many large ones that resisted other modes short of excision. My own experience of it is limited to this particular case, and would not warrant me in drawing any general conclusions.

In large venous *nævi* involving tissue to the amount described in Case III., the seton is, I believe, the safest and best means of treatment. Its use in the manner I have described is, I think, the surest way of obliterating the tumour. It acts in a twofold way—its zigzag course obstructing the circulation to a certain degree, while its presence, causing inflammation and suppuration in the tumour, leads to its consolidation.

DR. HARKIN thought that the operations as performed by Dr. Fagan were successful, but in cases like these he found it impossible to lay down any fixed rule, as every case had to be treated upon its merits.

DR. DEMPSEY pointed out in one of the patients the great resemblance between the scar and that seen in hare-lip, and accounted for this by the direction in which the suture was introduced.

DR. M'KEOWN dissented from Dr. Fagan's practice of sending a patient home until he had seen the final effects of his own operation. He showed many possible ways in which the treatment might be entirely useless for want of a proper adjustment at the proper moment long after the operation. Hence he did not approve of the subcutaneous ligature. He often thought that a surgeon's responsibility commenced after the operation was finished.

#### *Exhibition of Splint.*

MR. FAGAN exhibited a splint he contrived for extension of the wrist in acute diseases of that joint, a description and woodcut of which can be seen in the Report of the Transactions of the British Medical Association at the Cork Meeting in 1879.

#### *Two Cases of Lithotriety.*

DR. WHITLA exhibited two calculi which he removed, and gave a short account of the cases. The first was from a girl of six years, who presented herself at the Ulster Hospital for complete incontinence of urine of two years' duration. On an examination under chloroform, he found a large stone; and though his intention at the time was only to make a diagnosis, he was tempted to operate on the spot. The urethra, which just admitted a probe, was dilated by a pair of fine dressing forceps, and the stone easily caught, but extraction was impossible owing to its size and shape, without destruction of the soft parts. It was oblong, and lay with the great diameter across the bladder. A stout pair of necrosis forceps were introduced, the stone caught in the middle of its length and broken in two. Each piece was found to be too large for removal, and a further application of the forceps crushed them into the fragments which they saw in the specimen before the Society. These were removed with some trouble, and by their size an idea of the dilatability of the urethra might be learned. One was as large as a bean. The passage was dilated during the extraction so much that he easily introduced his little finger and explored the bladder thoroughly. He expected that a good time would be required before the canal would resume its tone again, but he was astonished to find that the little patient was able to keep her urine for two and a half hours after the operation, and continued to improve rapidly, leaving hospital in about a week perfectly well. The stone was phosphatic, and weighed nearly half an



ounce, and before removal seemed to entirely fill the bladder, which had contracted round it, the urine as it was carried by the ureters dribbling continually away. More than a year had passed and she was now in perfect health, and had no inconvenience whatever.

The history in connexion with the second specimen was interesting. A stout healthy gentleman, about thirty-eight years of age, had suffered from severe pain of a paroxysmal character in the left hypochondriac region, which was supposed to be of splenic origin by his medical attendant. He lived in England. He had several attacks of this kind, the last being about eighteen months since. About two months ago he received a letter from this patient describing most accurately the symptoms from which he was then suffering—symptoms evidently caused by stone. He wrote to him to that effect, and advised him to travel at once to London and see an hospital surgeon there; but forty-eight hours afterwards the patient walked into his study after crossing the Channel. He passed the small sound, which the members would see was a slight modification of Sir Henry Thompson's curve, and detected a small stone, which the patient affirmed gave an audible note. Upon the second day after this, Dr. Wheeler having administered chloroform, he passed Weiss's smallest size lithotrite, caught the stone and crushed it three times, the operation lasting about a minute and a half. No irritation of any kind followed. As Dr. Workman, who watched the case, remarked, there was not a trace of blood to be seen in the urine after this crushing. He bore the chloroform so badly that upon the next operation forty-eight hours afterwards, assisted by Dr. O'Neil, he passed in the lithotrite and only caught two small fragments which he reduced to powder, and washed the bladder out with Clover's apparatus. From thence the convalescence was very rapid. He was put afterwards under ether, and very carefully examined by himself and others, and subsequently by Professor Gordon, and no trace of stone was found. The fragments, they would observe, were all sharp and angular, and composed of oxalate of lime. The stone was very minute; all that could be collected amounted to not quite 22 grains, which he was certain was at least two-thirds of its entire weight. Though so small, probably not larger than a pea, its presence caused most excruciating agony for more than a year, preventing to some extent the patient, who was the owner of some coal mines, from pursuing his business. From the shape of the fragments they would see that the particles of the stone were united at angles to each other, giving it an almost spinous structure. Pain very much subsided after the first sitting, and entirely disappeared after the second. Upon the eighth day the patient walked several miles with complete freedom, which had not been his experience for more than a year before. Dr. Whitla then referred at some length to Bigelow's operation, which, he thought, marked a new era in the treatment of stone. He was satisfied that a

few angular fragments in the bladder were far more dangerous than the prolonged contact of polished steel instruments in careful hands. He showed the great advantages that arise from using a small sound with a sharp curve, and believed that he could not have detected the small stone with the large old-fashioned sound, while he thought he could not pass in the small one without striking it. He exhibited a small metal bougie which he had made for the treatment of fine strictures, its novelty being its peculiar curve, which was hardly perceptible, it being almost straight. Over a year has now elapsed (while going to press), and the patient has never once had a return of his old pain.

DR. WHEELER said he had the opportunity of witnessing the operation which was followed by so successful a wind-up, and he must say that he thought it would have been painless without the chloroform. He was surprised that the patient felt so relieved after the sitting, as he stated to him he felt no inconvenience whatever. He spoke about the difference between the treatment of stone now and what it was in his student days, when lithotripsy was almost unknown.

DR. J. W. BROWNE said he decidedly was in favour of a clean cut for stone. He detailed several cases upon which he had operated, and he could recall one in which he was now certain had he performed lithotomy he would have had a very different result. Both the cases before the Society he thought very successful.

DR. O'NEILL described the steps of the operation, as he had seen the patient, and he now understood what he had read in Sir Henry Thompson's book about detecting a stone not bigger than a pea and crushing it at once. The operation was performed without any difficulty, and what convinced him of the great advantage of lithotripsy was that he saw that there was not a trace of blood on the instrument or afterwards, and he could not see how in such a case coming before any surgeon again there could be a word spoken in favour of cutting.

PROFESSOR DILL, in thanking Dr. Whitla for his specimens, commented at length about the different operations for stone, and expressing himself confident that every year the cutting operation would become rarer and rarer, as diagnosis became easier, because stones would now be detected when they were small and crushed without danger. Both the cases were to him of great interest. He had not seen Bigelow's operation, but he could see it was based upon rational grounds.

## CLINICAL RECORDS.

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*A Case of "Typhus Siderans" ushered in by severe Epistaxis and followed by Recovery.* By WILLIAM R. EVANS, M.A., M.D., Univ. Dubl.; L.R.C.S.I.

THE following case seems worthy of record, not only for the tremendous rapidity in the occurrence of the most dangerous symptoms, yet followed by recovery, but for the good effects of treatment, the system responding to the use of large doses of muriated tincture of iron when the patient seemed almost in a hopeless condition; for although other remedies were freely used, notably turpentine and wine, and great attention paid to the importance of an abundant supply of fresh air, constantly renewed, yet the iron seemed to prevent further destruction of the red corpuscles, and to give the needed tone to the capillary circulation, so avoiding death.

On Wednesday, October 27th, 1880, I first saw Mr. H. R., who was suffering from severe epistaxis, which, however, was easily controlled for the time. I examined him carefully, as he seemed in a very nervous state, but could find nothing apparently the matter. The pulse was firm, even and natural, not above 90; he felt cool; his skin was acting naturally, and his tongue was clean. His bowels had been moved that morning; he was up and eat much as usual; had been complaining of a cold, which he thought had been hanging about him for two or three weeks.

There was no return of the hæmorrhage till the following morning, when it again burst out, not violently—perhaps he lost three ounces; but there was the greatest change in his general state; he had tried to get out of bed, but fell on the floor in a faint; his pulse was 108, temperature 102°; very restless and slightly delirious. When spoken to, however, he was quite rational. Over his chest there were scattered a few spots, quite petechial already, none elsewhere. His feet were cold, his skin clammy, and the respiration hurried. He made no complaint except that he felt weak. He was put on full doses of liquor ergotæ with sulphuric acid, and was ordered to take as much beef-tea and port wine as he could. As his state was so critical, he apparently being about to die from the intensity of the dose of the fever poison, I asked Dr. J. W. Moore to see him, who, two hours later, kindly examined him with me. There had been no return of the bleeding, but the eruption had spread much, now covering not only his chest, but his arms, belly, legs, and feet. His pulse had risen to 126, temperature 103·8°. He had

passed a small quantity of urine, which was loaded with albumen, and on his right thigh an ecchymosed spot had appeared, and a large one over his sacrum; his tongue loaded but moist; his bowels confined.

Looking on the case as one of very severe and very rapid typhus, he was put on full doses of ergot and turpentine (15 drops of each every two hours), and was ordered to take as much as possible of a drink composed of an ounce of muriated tincture of iron to a pint of water; to continue the beef-tea and port wine. The patient's state being one of such extreme urgency, we agreed to see him again in two hours, Dr. James Little kindly giving us the benefit of his assistance and advice.

His state was decidedly worse; the petechial spots were of a darker colour; two new ecchymoses had appeared on his back; his nose had again commenced to bleed, and in addition there was a dusky mottling of his skin; slight wandering, but he was quite conscious when spoken to. His pulse had risen to 130. The same treatment was continued, with the change from ordinary beef-tea to Liebig's acid beef-tea, and to endeavour to have as much fresh air as possible admitted to the room. He passed a restless night, little sleep, but was able during the night to take a pint of the beef-juice, half a pint of his iron solution, and 12 ozs. of port wine, as well as the ergot and turpentine mixture. The following morning his pulse was 124, respirations 45; his skin was now covered with a well-developed measly rash, in addition to the very numerous petechiæ and the dull mottling noticed the day previously. His feet, however, were warm, and his tongue slightly moist, though stained with the iron. His nose had not bled since; he passed a fair quantity of urine, loaded with albumen, and his bowels had twice freely moved during the night. The ecchymosed spots were larger and blacker, and a new one was making its appearance on the left ankle. Treatment to be continued; if possible to have more fresh air blowing right over him, and "sanitas" to be very freely used in the bed and about the room.

At 9 p.m. his condition in every way was much worse; his temperature had risen to  $104^{\circ}$ ; his pulse to 146, thready, irregular, and variable; respirations 42; his tongue had become dry, and was covered with sordes; rash duskier, and spots larger and darker; his extremities inclined to chill, and the lobes of his ears cold. He was quite sensible when spoken to, and could name those who spoke; made no complaint except that all his drinks felt cold. Treatment to be continued, and as his belly had become tympanitic to be well stuped with turpentine, and to have during the night some turpentine punch.

The following morning, the sixth day of his illness, he was in much the same state; he had slept at intervals during the night; pulse 130, respirations 40; tongue dry, brown, retracted. The rash was in no way improved; the dusky mottling was very marked; the ecchymosed spots were rather larger and of a worse colour; urine abundant, still loaded



with albumen; he passes his motions under him, and is quite unaware of it; although he can answer when spoken to, he makes no complaint. Treatment to be continued as before; his whole body (and not only his belly) to be stupefied with turpentine, and to have a thymol spray constantly playing over him.

In the evening his temperature had fallen to  $102.6^{\circ}$ ; his pulse to 132, still variable, feeble, and irregular; respirations 40, loud and hissing; tongue retracted, belly very tympanitic, and no change in the eruption. He can swallow well, and there is no diarrhoea. He took in the past twenty-four hours one pint of his iron drink, two pints of the acid beef-juice, and 24 ozs. of port, besides his turpentine punch and medicine. Treatment to be continued; in addition at bedtime 20 grains of quinine with 10 of camphor were given, in the hope of controlling the marked nervous exhaustion, and with a view to reduce temperature.

The following day (the seventh of his illness) the temperature had fallen to  $99.8^{\circ}$ , pulse 108, respirations 36. Rash rather better in colour, and the ecchymosed spots stationary; his tongue still retracted, dry, brown, and covered with sordes. The treatment was steadily continued, and, in addition to the beef-juice, he was given pancreatised milk-gruel, made according to the form of Dr. Roberts, of Manchester, as we feared the stomach would not bear milk. During the following night he slept for four hours, and passed a quiet day, the eighth of his illness, his general state remaining much the same. On the ninth day his temperature went up to  $103.8^{\circ}$ , and the respirations to 42, although the pulse continued at 108. On the tenth day all trace of albumen disappeared, from which time he rapidly convalesced. On the twelfth day a most violent acid, foul-smelling perspiration set in, which continued for twelve hours, when it was replaced by a healthy perspiration, which, lasting for two days, left him apyretic on the fourteenth day from the appearance of the earliest symptoms.

As to the treatment, it is hard to assign to any one thing its proper or even its relative value, when so many means were used. First it was considered essential that the patient should have abundance of fresh air, which, according to Murchison, is "one of the most important conditions for the successful treatment of typhus." By day and night a brisk fire was kept burning in the grate, and one of the two windows in the room was almost constantly open. In the next place it was contrived that he should be, as far as possible, in an aseptic atmosphere, which was produced by the very free use of "sanitas" both in the room and in the bed, by the thymol spray, and by constantly sponging him with Condy's fluid vinegar and warm water. All these measures were rendered possible or were made more effective by the fact that his room was large, airy, and well ventilated, by his having a second bed, into which he was slid occasionally, and by his having two excellent nurses.

As to drugs, he was kept on full doses of ergot, turpentine, and iron till the 9th day; then the ergot was omitted, quinine being substituted for it in 2-grain doses every 4 hours.

The following table gives the temperature, pulse, and respirations from the fourth to the fourteenth day, inclusive:—

Day of Disease	Temperature	Pulse	Respirations
4th { A.M.	102°0	108	30
{ P.M.	103°8	130	?
5th { A.M.	103°8	124	45
{ P.M.	104°0	146	42
6th { A.M.	?	?	?
{ P.M.	102°6	132	40
7th { A.M.	99°8	108	36
{ P.M.	102°0	120	?
8th { A.M.	100°6	108	38
{ P.M.	103°0	124	42
9th { A.M.	103°8	108	42
{ P.M.	102°0	116	40
10th { A.M.	102°8	116	44
{ P.M.	102°0	104	34
11th { A.M.	102°0	100	32
{ P.M.	100°8	102	28
12th { A.M.	100°2	98	28
{ P.M.	101°0	96	26
13th { A.M.	100°0	94	28
{ P.M.	100°2	96	28
14th { A.M.	98°5	84	24
{ P.M.	?	?	?



*Clinical Note on Eruptions occurring in the Febris Intermittens of West Africa.* By WILLIAM ALLAN, L.R.C.S.I., L.M., First Prizeman in Practical Anatomy; Prizeman in Anatomy and Physiology; and formerly Prosector of Anatomy in the Queen's College, Belfast.

IN two consecutive cases of intermittent fever which came under my care lately in West Africa there was a well-marked eruption present. In one case, a white subject, the eruption was of an erythematous nature; in the other, occurring in the person of a native, a distinct papular eruption of a variolous type appeared. I record brief notes of the cases and an outline of treatment.

CASE I.—C. T., aged twenty-eight, condition of body stout, came under my care 25th August suffering from intermittent fever. He had feeling of cold in back and limbs with rheumatic pains previous evening. On morning of 25th was seized with rigors and vomiting; character of vomit bilious; feet cold. Objective symptoms presented nothing peculiar with the exception of his being a little bilious looking. In the early stage of this fever, as in this case, the vomiting and accompanying straining is generally severe and exhausting, the stomach rejecting everything. For this condition I applied a flannel roller around the abdomen (epigastric region), which afforded him much relief, and is of practical value. Intense thirst, anorexia, slight dyspnoea with dry cough were present. During the cold stage the ordinary treatment was adopted, that of applying external warmth by means of blankets and hot-water bottles to the feet, and during this stage I gave him a small bottle of champagne in divided doses, so as not to overload the stomach and on account of the vomiting. In this stage of the fever it is believed that the champagne hastens the hot stage and promotes the tendency to sweating; this sweating is generally the resolution of the fever, and its appearance is anxiously looked for by the patient.

*Pyrexia, Course and Mode of Progress.*—Six observations, each observation lasting five minutes, and at an interval of one hour each. First observation gave temperature  $101.8^{\circ}$ , pulse 94, respiration 20—the patient passing by a feeling of alternate heats and chills into the hot stage. Second observation.—Temperature  $102.4^{\circ}$ , pulse 102, respiration 24. At the commencement of the hot stage I administered 10 grains of Dover's powder, and one hour after one and a half ounces of compound senna mixture. Arterial excitement was high, and intense frontal headache complained of. For this the continuous application of a cold evaporating lotion proved grateful and soothing to the patient, relieving restlessness. At the third observation—temperature  $103.4^{\circ}$ , pulse 106, respiration 24—profuse sweating set in, moisture being first observable about the upper part of the body, and as free action of the skin set in a strong sickly odour was exhaled. As soon as the skin becomes moist I give quinine, and in this case I administered 20 grains during the sweating stage as follows:—Fourth observation.—Temperature  $102.4^{\circ}$ , pulse 102, respiration 20. Sweating, 12 grains of sulphate of quinine in solution given. Fifth observation.—Temperature  $100^{\circ}$ , pulse 90, respiration 18. Sweating, 8 grains of quinine given. On this practice Sir Ranald Martin observes:—"Several very able medical officers are in the habit of giving quinine in the intermittents of the East Indies in doses of 25 to 30 grains, 'as soon as the patient begins to perspire freely after the hot stage;' and the sulphate of quinine is exhibited variously by various practitioners, some, as Maillot, giving very large doses, such as 20 and 30 grains, four hours before the expected paroxysm, while others begin

to administer the quinine on the subsiding of the paroxysm and during the sweating stage." Sir Ranald's own practice was—"On the following morning, the intermission being complete, the sulphate of quinine is to be administered at intervals of three hours during the day, the patient being kept in bed and supplied with farinaceous food only." As soon as the sweating abated I had the patient rubbed dry, clothing changed, and removed him to a dry bed. At the termination of this stage his hands presented a white and sodden appearance. At the sixth observation—temperature  $98.6^{\circ}$ , pulse 86, respiration normal—a critical discharge of reddish urine took place, the bowels also acting freely. This shows the advantage of giving a purgative during the fever, as it prepares the way for the quinine.

The eruption appeared during the hot stage, and presented the following characteristics:—*Time*, during the hot stage. *Seat*, root of the neck and upper part of thorax. *Amount*, considerable. *Character*, reddish in colour and patchy. *Duration*, brief. *Sequelæ*, none observable.

The after-treatment consisted in keeping up free action of the bowels, followed by quinine, anti-febrile diet, and avoiding chills.

CASE II.—C. H., native of West Africa, a man of powerful physique, aged about thirty years, came under my care suffering from intermittent fever. During the progress of the case the face was turgid, the eyes being deeply bloodshot, and during the febrile stage a distinct papular rash made its appearance, having its primary seat on the forehead, face, and afterwards appearing on the chest. The papules were separate and distinct to the touch, simulating variola in the early stage so closely that I isolated the case to ensure a correct diagnosis. He was suspicious about my appearing to consider it smallpox, and assured me that whenever affected by this fever a similar rash made its appearance. After simple treatment, followed by quinine, all symptoms disappeared rapidly.

Characteristics of eruption:—*Time*, during febrile stage. *Seat*, forehead, face, and chest. *Amount*, considerable. *Character*, papular; did not go beyond this stage. *Duration*, brief. *Sequelæ*, none observable.

*Remarks*.—Roberts mentions a patchy rash occurring in the hot stage of this fever, as in Case I. I cannot find any description of a papular eruption occurring in intermittent fever, as in Case II.



# SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

## VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday  
December 4, 1880.*

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin, -	314,666	676	848	6	10	29	1	20	44	13	35·0
Belfast, -	182,082	472	431	—	2	11	—	30	11	17	30·8
Cork, -	91,965	172	196	—	7	10	1	3	8	7	27·7
Limerick, -	44,209	91	138	—	5	16	—	—	—	5	40·6
Derry, -	30,884	68	60	—	—	—	1	—	8	2	25·3
Waterford, -	30,626	56	115	—	23	15	—	—	2	13	48·8
Galway, -	19,692	51	40	—	—	—	—	—	5	1	26·4
Sligo, -	17,285	34	29	—	—	5	—	—	1	3	24·1

### Remarks.

In all the towns a high death-rate prevailed. In Waterford the mortality was excessive, and in Limerick and Dublin it was extremely high. It was at the rate of 30·9 per 1,000 of the population annually in the sixteen principal town districts of Ireland, 21·7 in twenty large English towns (including London, in which it was also 21·7), 22·5 in Edinburgh, and 22·5 in Glasgow. Omitting the deaths of persons admitted into public institutions from localities outside the district, the death-rate in the Dublin registration district was 34·2 per thousand annually, while it was 34·9 within the municipal boundary. In Dublin the deaths referred to zymotic affections numbered 150, compared with an average of 139·9 in the corresponding period of the previous ten years. Fever was the most fatal disease of this class, but scarlatina and whooping-cough were also prevalent and fatal. Of the 44 deaths from fever, 18 were attributed to typhus, 24 to enteric, and 2 to “simple continued fever.” An epidemic of typhus was rapidly increasing—the number of cases in hospital at the close of each week of the period being 109, 123, 126, and 149 respectively. So far the type of the disease does not appear to be malignant, as the mortality has been moderate. Whooping-cough was very fatal in Belfast;

measles and scarlatina were prevalent and fatal in Cork, Limerick, and especially in Waterford. In the last-named town the death-rate from the seven chief zymotics was not less than 23·4 per 1,000. Measles caused 23 deaths, scarlatina 15, and diarrhoea 13. In Dublin diseases of the respiratory organs were credited with 181 deaths, against a ten-years' average of 135·6. These deaths included 135 from bronchitis (average = 98·8), and 35 from pneumonia (average = 20·7). Mild weather in the latter half of the period checked the mortality from this class of maladies. On Saturday, December 4, there were under treatment in the principal Dublin hospitals 4 cases of smallpox, 16 of measles, 38 of scarlatina, 149 of typhus fever, 31 of enteric fever, and 15 of pneumonia.

#### METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of November, 1880.*

Mean Height of Barometer,	-	-	-	29·879 inches.
Maximal Height of Barometer (on 3rd at 9 p.m.),	-	-	-	30·526 „
Minimal Height of Barometer (on 16th at 7 a.m.),	-	-	-	29·518 „
Mean Dry-bulb Temperature,	-	-	-	44·3°
Mean Wet-bulb Temperature,	-	-	-	42·2°
Mean Dew-point Temperature,	-	-	-	39·7°
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·245 inch.
Mean Humidity,	-	-	-	84·0 per cent.
Highest Temperature in Shade (on 13th),	-	-	-	59·3°
Lowest Temperature in Shade (on 18th),	-	-	-	28·8°
Lowest Temperature on Grass (Radiation) (on 20th and 21st),	-	-	-	23·2°
Mean Amount of Cloud,	-	-	-	65·0 per cent.
Rainfall (on 20 days),	-	-	-	3·235 inches.
General Directions of Wind,	-	-	-	S.W. & W.

#### Remarks.

After the first few days the weather was for a time mild, but the second half of the month became notable for frequent gales and sudden and extreme changes of temperature. Until the 6th conditions were anticyclonic, so that comparatively settled weather prevailed. About the date named a cyclonic system in the far north began to affect the weather. Westerly winds of hourly increasing strength brought with them a rise of temperature and clouded skies. Generally mild open weather prevailed until the 13th, when an extensive depression approached the N.W. of Ireland, causing S.W. gales on the forenoon of the 14th. At 3 p.m. the wind shifted suddenly to N. in Dublin with strong squalls and a rapid fall of temperature. Early on the morning of

the 16th a still more serious cyclonic centre passed eastwards very near Dublin, where at 7 a.m. the barometer read 28·518 inches. At 3 a.m. of the 18th the wind veered suddenly to E. under the influence of a new disturbance which advanced to the mouth of the English Channel from the Atlantic. A fall of snow and hail with thunder accompanied the shift of wind in Dublin. At 8 15 p.m. of the 19th a sharp thunderstorm passed over the city with heavy showers of hail and sleet. A brief period of dry, cold and frosty weather was succeeded on the 22nd by a complete thaw. The record of the last week of the month is one of deep atmospherical depressions, strong S.W. gales, and high temperatures. Very severe storms were felt in Ireland on the 25th and 26th. At 8 a.m. of the latter day the barometer read 28·49 inches in the Hebrides and 30·34 inches at Toulon. In the evening lightning was seen from Dublin, and at night hail showers fell. Temperature, however, remained high to the close of the month. On the evening of the 3rd a brilliant display of aurora borealis was visible from all parts of north-western Europe. The ground was white with snow and hail from the night of the 17th to the 22nd. Thunder and lightning occurred at 3 a.m. of the 18th, and the next evening there was a thunderstorm. Rainbows were frequently seen on the 25th. There was a beautiful sunset on the 30th.

## PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

### RESORCIN AND ITS ANTIPYRETIC ACTION.

IN a series of articles (*Allgemeine med. Cent. Zeitung*, July 28th and 31st, and Aug. 4, 1880) Prof. Lichtheim, of Berne, calls attention to this powerful drug, which, although discovered several years ago by the chemist Hlasiwetz in Vienna has not hitherto received the attention of the medical world. Dr. Andeer, of Würzburg, quite recently studied the therapeutic value of resorcin, and Lichtheim has supplemented this study by a series of clinical observations, which certainly merit professional consideration. Resorcin has derived its name from its similarity to orcin (contained in a colouring moss termed orseille) and certain resins, especially galbanum. The chemical formula of resorcin is said to be  $C_6H_4(OH)_2$ , and it belongs to the series of phenols. Its antiseptic properties are in every way equal, if not superior, to those of carbolic acid. In febrile conditions its administration produces a rapid and considerable lowering of the temperature, which exceeds that of quinine and salicylic acid, but this effect is of short duration. A dose of two or three grammes

produces, after a few minutes, vertigo, tinnitus aurium, facial congestion, an accelerated respiration, and an increased pulse-rate. In ten or fifteen minutes perspiration begins, and fifteen minutes later the patient is bathed in sweat. About one hour after its administration the patient's pulse and temperature are normal. This antifebrile action is, however, not invariably so marked, and in this respect resorcin appears to be subject to the same variations that characterise other antipyretics. Besides its very temporary effects (pulse and temperature generally attain their former height some three or four hours after the cessation of the drug), resorcin appears to have certain other drawbacks, which until now have not been remedied. Phenomena of excitation usually precede its febrifuge action, and these may sometimes assume the shape of active delirium or other cerebral manifestations. Coma was also observed in one case. On the other hand, all these acute symptoms are quite evanescent, and in no case was any deleterious "after-action" noticeable. Lichtheim thinks that if we should succeed in doing away with these unpleasant symptoms, resorcin would soon become as widely known and used as quinine and salicylic acid. In non-febrile conditions and on healthy subjects the new drug appears to have no action at all. The pulse and temperature show no change, neither were any cerebral phenomena observable, except perhaps a slight vertigo and moderate tinnitus aurium. Resorcin is easily soluble and readily absorbed, and this appears to account for the rapidity of its action and its powerful effects. Pneumonia, erysipelas, and typhoid fever are not much influenced in their course by the administration of resorcin, but on intermittent fevers it seems to have a specific antidotal action. As a disinfectant, and for external antiseptic application, resorcin may also be conveniently employed.—*N. Y. Med. Record*, Nov. 13, 1880.

#### SUPPURATION IN THE LOWER EYELID DUE TO DENTAL CARIES.

M. PARINAUD has an interesting paper on this subject in the *Arch. Gén. de Méd.*, June, 1880. He thinks that alteration of the temporary or permanent teeth may provoke suppuration in the lower lid on a level with the orbital margin, or in the region of the lachrymal sack, where it simulates tumour or fistula of the sack. The course followed by the pus arising from an alveolo-dental periostitis is intra-osseous, and hence difficult to discover. He thinks that there is a variety of suppuration around the eye, of dental origin, peculiar to children, due to the arrangement of the alveoles of the first and second dentition. In the adult a suppurative process of dental origin is occasionally met with in front of the lachrymal sack. In these cases the pus developed in the alveole may first penetrate into the maxillary sinus, where it provokes inflammation, and secondarily leads to the formation of a cutaneous fistula at the internal canthus; in another series of cases, the lachrymal passages are free,



the maxillary sinus is not involved, and the connexion between the abscess or fistula at the internal canthus and the dental process cannot be discovered. The vascular canals which open constantly by one or two orifices upon the ascending ramus of the maxilla, in front of the lachrymal groove, and which communicate also with the foramina of the alveoles, explain the occurrence of these suppurative processes, which in so many instances are accompanied by necrosis of the orbital margin.—*N. Y. Med. Journal*, Oct., 1880.

#### A NEW EYELID RETRACTOR.

SURGEON-MAJOR E. A. FITZGERALD, of the Bengal Medical Service, has contrived an improved eyelid retractor, in which the screw portion of the instrument is removed from the outer to the inner side of the eye by resting its shafts, by means of an arch, against the side of the nose. The advantages of this instrument are stated to be:—1. All incisions of the cornea or sclerotic having to be made from the outer side, greater freedom of action is allowed to the hand of the operator, in consequence of the screw part of the retractor being entirely removed from the field of operation. 2. More space is afforded for operation, and all incisions of the cornea or sclerotic can be done with increased facility. 3. The shafts of the instrument being supported by the side of the nose, the eyelids are materially relieved of the strain and weight of the retractor.

#### QUEEN'S COLLEGE (CORK) MEDICAL SOCIETY.

THE Annual General Meeting of this Society, which was established last year for the practical study and discussion of subjects connected with medicine and surgery, was held in the Queen's College, Cork, on Friday, December 3, for the transaction of general business and the election of officers for the ensuing Session. It was shown that the working of the Society for the past year was attended with highly-beneficial results to the members. From the Treasurer's Report the affairs of the Society appeared to be in a flourishing condition, and accordingly it was decided to award prizes at the end of the year for the best papers read, and the most complete set of pathological specimens exhibited, during the Session. The following officers and members of Council were elected:—President: Professor Stephen O'Sullivan, M.D., F.R.C.S.I. Vice-President: C. Yelverton Pearson, M.D., M.Ch. Hon. Secretaries: G. A. Rountree, B.A., and Frederick E. Adams. Treasurer: William E. Hadden. Members of Council: T. J. Crowley, P. J. Gallwey, H. H. Charles, C. J. Holmes.

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## MEDICAL SCIENCE.

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FEBRUARY 1, 1881.

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### PART I.

#### ORIGINAL COMMUNICATIONS.

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ART. IV.—*Intra-Capsular Fractures of the Neck of the Femur.*<sup>a</sup>  
By ALEXANDER GORDON, M.D.; Professor of Surgery, Queen's College, Belfast.

IF we carefully compare the statements usually promulgated by surgical writers with those which may be deduced from a good collection of fractures, whether intra- or extra-capsular, it will be at once apparent that much information is still wanting to bring them into perfect accord. The object I have in view in bringing forward the present communication is to show that we have still something to learn regarding these common accidents.

I shall first take up the *Intra-Capsular*.

The specimens which I now exhibit clearly demonstrate that we have three forms of this accident, and I might add a fourth, but it might be justly regarded as a variety of the ordinary *Intra-Capsular Fracture*, in which the compact tissue of the inner surface of the outer fragment has been driven into the inner fragment, forming an impacted intra-capsular fracture.

#### FIRST SPECIES.

*Transverse Fracture of the Neck of the Femur through its junction with the Head, without Laceration of the Periosteum—Osseous Union.*—I met with my first specimen of this rare form of accident in 1848, and after careful examination I came to regard it then,

<sup>a</sup> Read before the Ulster Medical Society, January 4, 1881.

as I do now, as an example of a species of fracture hitherto overlooked, or at least not recognised as a special form. The head is displaced or rotated backwards, and is slightly penetrated by the neck behind, whilst in front the margin or corona of the head and the anterior surface of the neck are on the same plane. In one of the specimens the neck is two or three lines in advance of the head.

The extent to which the head is rotated backwards ranges in the different specimens from  $25^{\circ}$  to  $35^{\circ}$ , as is shown by the altered aspect of the depression for the attachment of the ligamentum teres. There is osseous union in all of them.

In 1871 I obtained a similar specimen, in which there was also firm osseous union. During the following session I met with a recent example in the anatomical rooms. In this specimen the head could be moved slightly in any direction, the sole bond of union between it and the neck being the untorn periosteum. These three specimens are deposited in the Queen's College Museum, and, when carefully considered, show clearly that an aged female, probably bedridden, may sustain fracture of the neck of the femur from some slight motion, which may be unattended by any shortening or other evidence of the accident, except perhaps inability to move the limb, with pain on pressure in the groin below the margin of the acetabulum. When a limb dangles uselessly from the pelvis, owing to any cause, such as paralysis or scrofulous disease of the knee-joint, the neck and head of the femur become more vertical—*i.e.*, the angle between them and the shaft becomes more obtuse, and the head becomes displaced upwards and outwards, so as to project over the upper surface of the neck. In such a condition the compact tissue is unusually bent as it passes from the upper border of the neck to the head. This form of displacement can be easily recognised by the continuity of the upper surface of the neck with that of the head. The displacement noticed in these cases differs in direction from that which occurs in these fractures, as in the latter the fossa of the ligamentum teres looks unnaturally backwards, in the former upwards. In point of fact, I do not know of any cause that would produce displacement backwards of the head except fracture, and that this view of the matter is the correct one, a specimen recently produced leaves no room for doubt. The three specimens are similar in size, they are in a state of atrophy, and the deformity in each case is doubtless the result of fracture. In cases of this kind

the periosteum is untorn, the fragments, if the patient remains quiet, are held closely in apposition, and an ample supply of blood is afforded by vessels of the periosteum and ligamentum teres, so that the conditions which prevent osseous union in the ordinary intra-capsular fractures do not exist here.

*Treatment.*—In the treatment of these, as of other fractures of the neck of the femur, I am opposed to the use of splints. If a splint be applied, it loads the limb unnaturally, and compels the patient to maintain the supine position. The back becoming painful, the patient tries to procure relief, but the limb being loaded by the weight of the splints, more than usual exertion is necessary to alter the position, which acts chiefly on the broken surfaces; whereas, if the limb is free, the patient changes the position slowly, without disturbing the fragments or causing them to grate forcibly upon each other. In addition to this may be noticed the injurious effects on aged persons of prolonged maintenance of the supine position. I have no doubt that the mortality is much greater in cases where splints are used than in those where they are not.

#### SECOND SPECIES.

*Transverse Fracture in the Middle of the Neck of the Femur, with Osseous Union.*—There are six specimens of this fracture in the Museum of the Queen's College. They are all so much alike that the description of one would apply equally to all the others. When force is applied from before backwards, the neck being in a state of extreme senile atrophy, it bends and breaks, forming a salient angle in front, and an acute concavity behind. The periosteum being untorn, osseous union takes place, resembling the Greenstick fracture which occurs in young persons, and it might not be inappropriately styled the Greenstick fracture of old age.

The diagnosis in this, as in the former fracture, can only be made out by a careful examination in front of the capsule in the groin. The salient angle of each in front, although detected with difficulty, will be acutely painful on pressure, and if to this we add the history, which is that of the pelvis having fallen backwards, whilst the extremity was fixed, or the extremity being rotated outwards, the pelvis being fixed, or indeed any force which would bend the neck from before backwards. That this is not an uncommon form of accident may be assumed from the fact that in the session 1879-80 I got three specimens of it. In one of these the fracture, instead of passing directly transverse through the whole thickness



of the bone, passed obliquely upwards. The compact tissue in front is firmly united, whilst behind there is no union, there being an interspace between the fragments behind.

*Diagnosis.*—In some cases there will be no shortening; in others it may be to the extent of one-half or three-quarters of an inch, or even more. There will be slight eversion, but this will be so trifling that it could scarcely be regarded as diagnostic. But if we associate the history, the age of the patient, and the pain on pressure over the middle of the neck, with that instinctive dread of movement which usually attends fractures without displacement, a correct diagnosis may be formed.

*Treatment.*—The treatment is the same as in the former variety. In these, as in all other fractures of the upper end of the femur, all attempts at rotation or forcible extension of the limb should be most carefully avoided. It may be very satisfactory to the surgeon to make out the existence of a fracture by these means, but it is not at all for the advantage of the patient that a fracture which would unite by bone and form a useful limb should be converted into an ununited fracture, and leave the limb a dangling and useless appendage to the body.

### THIRD SPECIES.

*The Ordinary Intra-capsular Fracture.*—In the two forms of intra-capsular fracture just described there is osseous union, whereas in the ordinary intra-capsular fracture osseous union is indeed of extremely rare occurrence. The question may be asked—In what circumstances do they differ? The ordinary intra-capsular fracture is caused by the weight of the body suddenly falling upon the neck whilst the extremity is more or less abducted. It usually breaks about half an inch from the head, just at the part where it changes from the quadrilateral to the circular form, and is usually oblique from above downwards, with extensive laceration of the periosteum, and this laceration of the periosteum is the main element of the want of union.

In the former specimens the fragments are firmly held in apposition, whereas in the last, owing to the extensive laceration of the periosteum and direction of the fracture, there is a constantly recurring grating of the fragments upon each other whenever the patient makes the slightest movement, and this grating breaks the contiguous compact tissue of both fragments.

If we examine carefully a comparatively recent specimen of the

ordinary intra-capsular fracture, we will find portions of the compact tissue of the outer fragment overlying its cancellated tissue, as shown in one of the specimens which I now exhibit. The disappearance of the neck is usually attributed to absorption. No doubt it is absorbed and disappears, but the main agent preparatory to absorption is movement of the fragments upon each other, which produces a constantly recurring breakage of the neck into small fragments until it ultimately disappears, and whilst this is taking place the same movement strips or tears off the periosteum from the neck. In the numerous examples of intra-capsular fracture which I have dissected there were always several bands of the untorn periosteum extending from the head to the base of the neck, and these were the only bonds of union which existed between the two fragments.

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ART. V.—*A Case of Secondary Mitral Incompetency in Aortic Patency, with Cheyne-Stokes' Respiration.*<sup>a</sup> By C. J. NIXON, M.B., Univ. Dubl.; Physician to the Mater Misericordiæ Hospital, and Physician-in-Ordinary to the Lord Lieutenant.

THERE are some points of interest in the case which I have the honour of bringing before the Society that, I trust, may redeem its somewhat trite character. Its history and symptoms are briefly these:—

CASE.—The patient, a gunner in the Royal Artillery, aged forty-five, was accustomed to make severe muscular efforts. Six months before his admission to hospital he complained of short breathing when ascending a hill or stairs, and that when he took food of any kind which disagreed with him he suffered from attacks of giddiness and occasional fainting seizures. He had had a bad attack of syphilis some sixteen years ago, with a recurrence of constitutional symptoms principally affecting the throat and skin. The conditions noted when seen in hospital were as follows:—

The radial pulse was so distinctly collapsing that attention was at once directed to the heart. A loud *bruit de scie* was heard over the aortic area, the murmurs following the usual rule as regards the direction of their transmission. The aortic second sound was entirely replaced by the diastolic murmur. At the apex of the heart the first sound could be

<sup>a</sup> Communicated to the Medical Society of the King and Queen's College of Physicians, Wednesday, January 5, 1881. [For the discussion on this paper, see p. 171.]

heard very indistinctly; it was occasionally replaced by a soft, blowing systolic murmur. A single hoarse systolic murmur was audible in the carotids and subclavians. The sound of Skoda existed in a marked degree. There was a considerable increase in the area of cardiac dulness, especially to the right of the sternum, whilst the feeble apex impulse was displaced downwards and on a line with the left nipple.

There were evidences of congestion of the bases of both lungs; the liver was considerably enlarged; both ankles were œdematous; the urine was passed in small quantity, of a sp. gr. of 1025, loaded with urates, but free from albumen. A few days after the patient's admission to hospital the respiration was noticed both during the periods of sleep and wakefulness to be of the markedly ascending and descending type. In the ascending scale the inspirations were deeply drawn, slow, loud, and suspirous, terminating by an apparently painful gasp. In the descending scale the inspirations were feeble, at first rapid, but getting progressively slow. In both scales the expirations were noisy, attended with considerable effort, and accompanied frequently by a blowing motion of the lips and cheeks. A number of observations were made on different occasions on the respiration and on the pulse-respiration ratio, with the following result:—

The usual duration of the period of apnœa was 22'', of the succeeding respiratory period, 43''. During the latter there were 28 respirations, being at the rate of about 39 per minute.

During apnœa the pulse invariably became full and quick; during the respiratory period it becomes progressively feeble, thready, and slow. The ordinary pulse-rate during apnœa was 90 in the minute; during the respiratory period, 78 per minute. I dwell specially upon these points, as I shall have occasion to advert to them again.

During the progress of the case the usual effects following mitral inadequacy manifested themselves. The dropsy in the limbs increased, the abdomen became ascitic, the patient had repeated attacks of hæmoptysis and epistaxis, large purpuric spots appeared upon the legs and abdomen, and the veins of the neck became greatly distended and pulsatile. The patient finally died, with the usual symptoms present in carbonic acid poisoning, the abnormality of respiration continuing up to the time of death.

I merely exhibit the heart and aorta. The former is considerably enlarged, and has the square form usually found in hypertrophy and dilated right side. The left chambers are considerably dilated, the left ventricle possessing the globular character usually found in extreme dilatation. Accompanying the dilatation is a considerable hypertrophy of the wall in parts, especially towards the base. At one point, however, towards the posterior aspect of the ventricle near the septum, the wall is exceedingly thin, being not more than three-eighths of an inch in

thickness. The aorta is in an advanced condition of disease; it presents distinct signs of endarteritis and atheromatous degeneration. The ascending portion is considerably dilated. The dilatation of the aorta has produced an incompetent condition of the segments of the aortic valves. On applying the usual hydrostatic test to the aorta, the water flowed through an aperture made in the ventricle; the aortic valves, however, although incompetent, are not much altered in texture. The left auriculo-ventricular opening is extremely dilated, and the mitral segments are quite insufficient to close it. The right chambers of the heart are considerably dilated, and the walls of the right ventricle are hypertrophied. The only other point worthy of comment is the condition of the right auricular appendix. There are shreds of fibrin partially filling it, some of which are readily detached. The lungs presented the most marked examples of hæmorrhagic infarction. The infarctions were found principally about the roots. There existed, on microscopical examination, distinct evidence of fatty degeneration in the walls of the left ventricle. The liver was very much enlarged, congested, and presented the appearance usually found in commencing cirrhosis from prolonged venous congestion. The kidneys were in an advanced stage of the cirrhotic form of Bright's disease.

This case illustrates very well one of the most common results of aortic regurgitation—viz., the occurrence of secondary mitral incompetency. This condition may be, in most instances, regarded as salutary, as it clearly obviates the tendency to sudden death from paralytic distension of the left ventricle, constituting what may, in my mind, be termed a safety-valve function of the mitral valve. It seems almost paradoxical to accept the two statements that have been made as to the course of events in aortic patency—(a) that of all valvular diseases of the heart the prognosis as regards the duration of life and activity of the patient is in it the most favourable; (b) that of all valvular diseases aortic patency is the one most likely to end in sudden death. I think, however, that both statements may be taken as true, the difficulty existing in being able to distinguish the cases where the prognosis is favourable from those in which it is the reverse. In every instance we must take into careful consideration the age and occupation of the patient, and the mode of origin of the disease, whilst we must, if possible, estimate the extent of the dilating force on the left ventricle.

It occurs to me that there are two classes of cases of aortic patency in which the prognosis may be regarded as favourable—(a) where the disease is developed in young people as a result of



non-rheumatic aortic valvulitis, and where, with a limited amount of stenosis of the aortic orifice, a small amount of blood regurgitates through the incompetent valves. Here, if the nutrition of the patient be good, and the occupation do not entail any disturbance of what has been well termed by Wardrop the "musculo-cardiac function," the duration of life may be long, and the patient usually does not complain of any disturbances in the circulation. The obstructive disease at the aortic orifice, with a moderate increase of intra-ventricular pressure, secures an amount of compensation which for a long time remains more or less perfect. (b) In old age, where patency is brought about not by valvulitis, but by extension of disease from an atheromatous aorta. In such cases we find that the amount of leakage into the ventricle is extremely small, possibly only that permitted by some slight thickening or irregularity of the lunulæ of the valves. In this instance the dilating force exercised upon the interior of the left ventricle is small—1stly, owing to the smallness of the stream of blood regurgitated, and 2ndly, owing to the loss of elasticity in the aorta. The chief danger which patients so affected are exposed to is that the degenerative changes occurring at the root of the aorta may attack the coronary arteries, and thus lead to a slowly developing myocarditis.

On the other hand, we find aortic patency developed under, at least, two conditions where the prognosis is not by any means so favourable—(c) where the lesion occurs in vigorous adults, and is caused by a sudden rupture of one of the aortic segments. In this case the heart has been taken unawares, there has been no time given to it to prepare for the altered conditions of the circulation, a rapidly developing but insufficient hypertrophy gives way in a short time to over-strain, the ventricle is disproportionately dilated, and even before any very marked degeneration occurs in the myocardium the ventricle becomes paralysed in asystole, and sudden death is the result. Again, (d) you have the class of cases usually met with amongst adult males where the disease is traceable to valvulitis from rheumatism, syphilis, or the over-strain which attends aneurismal dilation of the arch of the aorta, and where it is, in all these conditions, generally associated with habits of intemperance. The extent of arterial collapse, the altered position and dimensions of the heart, and the subjective phenomena which are present, indicate the great amount of blood that is regurgitated into the ventricle. A certain proportion of such cases occurs without

the supervention of dropsy, of distressing pulmonary symptoms, or any of the signs that indicate secondary mitral disease, and, under such circumstances, sudden death is apt to ensue.

During last September, when in London, I was asked by my colleague, Mr. Hayes, to see a gentleman, a friend of his, residing there, who wrote to him complaining of some dyspeptic troubles, cardiac palpitation, and of a sense of tightness across the chest. On examining the patient, a full, florid-looking man, aged about forty-five, I found that he had the usual signs of aortic obstruction and regurgitation. There were no abnormal signs in connexion with the mitral orifice, the patient had no cough, nor were there any indications of lung complication. He complained of a feeling of weight in his stomach after taking food, and of great flatulency. The heart's apex was displaced considerably downwards and towards the left mammillary line. The cardiac beats were very irregular. There were slight enlargement of the liver, a sluggish action of the bowels, a tendency to hæmorrhoids, with occasional attacks of bleeding of moderate extent. Beyond the symptoms mentioned, the patient felt in good health; he was accustomed to walk some distance to and from his office every day, and except that he could not run or make any other violent exertion without experiencing a sense of painful breathlessness, he noticed no change in his general condition. I should mention that the valvular lesion was traceable to an attack of acute rheumatism, from which he had suffered some years ago. I prescribed for the patient what I thought suitable to meet the indications in the case. As the action of the heart was excitable and irregular, and the patient was of a nervous temperament, I ordered for him a sedative mixture containing bromide of potassium in combination with the tincture of belladonna, and some hepatic alterative pills; I gave him the necessary directions regarding his dietary and stimulants, and specially warned him against all excitement, physical or mental. I regarded the case as a most unpromising one, and I wrote to this effect to Mr. Hayes. Ten days afterwards I received a letter from the patient to say that he felt much better, and expressing a sanguine opinion as to his complete recovery. The salutary change, however, was not destined to be of long duration, for one day in the first week of December last, after walking to his office, and being apparently in his usual condition of health, he was noticed to fall from his chair to the ground, and when an observer went to his assistance he found that he was dead. Here,

unfortunately, secondary mitral incompetency was not developed, and hence the abrupt termination of the case.

I believe, however, that in most instances of aortic valvulitis the occurrence of secondary mitral incompetency is the rule, though under what precise circumstances this condition is developed I cannot pretend to say. Extreme distension of the ventricle is, no doubt, an important factor, so also extension of disease from the posterior segment of the aortic valve to the anterior flap of the mitral, owing to the nature of the vascular supply of both these structures. The point of obscurity lies in the fact that in cases of sudden death in aortic patency the left ventricle is found greatly dilated and distended with blood, although the dilatation did not lead to mitral inadequacy, by means of which the tendency to a suddenly fatal issue would have been obviated. It is possible that a careful examination into the condition of the coronary arteries, and the relation of the orifices of those vessels to the stream of regurgitating blood, may serve to explain the different conditions found in these cases, and that at some future time we may be able to determine with accuracy which of the aortic segments are specially implicated, and what import can be attached to such lesion. The members of the Society are aware that a step in this direction has been already made by Dr. Foster, which, following the history of many discoveries, may be cavilled at by some as an excessive refinement in diagnosis, but it is one which, at least, merits the exercise of observation to test its accuracy and worth.

I may say that with regard to the occurrence of petechiæ in the last stages of aortic patency—a not uncommon sign in this disease—I consider we have in the altered states of the circulation conditions which adequately account for their production without assuming the existence of a waxy degeneration of the smaller blood-vessels, especially in cases where there is a history of syphilis. If we take into consideration the extremes of tension to which the smaller arteries and capillaries are subjected in aortic patency, and that the sudden lowering of their tension must lead to imperfect nutrition of their walls, an explanation is afforded of the minute hæmorrhages which occur in the disease.

In connexion with the signs of lesion of the mitral valve which existed in the case, I may draw the attention of the Society to the indistinctness of the first sound at the apex of the heart, and its occasional replacement by a systolic murmur. The absence of a left ventricular first sound—a phenomenon specially mentioned by

Traube—is not, in my experience, common in aortic regurgitation. Where, however, it is absent, and occasionally replaced by a systolic murmur, the diagnosis of functional mitral incompetency may fairly be made.

The only other point of interest in connexion with the case that seems to me to call for comment is the rhythmical irregularity of respiration which existed. Some time ago I exhibited to the Pathological Society the thoracic and abdominal viscera of a patient, aged sixty, who died with general dropsy supervening upon dilated heart, emphysema, and the cirrhotic form of Bright's disease. In this case Cheyne-Stokes' respiration existed in a marked degree, and it presented the characteristics as to the pulse-respiration ratio to which I have already alluded. The aorta was, however, remarkably healthy in appearance, and entirely free from dilatation or atheromatous change. I took occasion to remark that the conditions found did not support Dr. Hayden's view as to the cause of this abnormal condition of breathing—viz., suspension of tissue respiration, owing to a failure of capillary circulation consequent upon a dilated and atheromatous aorta. The state of the chambers of the heart found in the case rather bore out the ingenious theory of Dr. Little; and I must acknowledge that in all the instances of Cheyne-Stokes' respiration where I had an opportunity of examining the morbid appearances, I always found evidences of dilated and hypertrophied right ventricle, and impaired power of the left ventricle. It seems to me, however, that most of the theories which have been proposed are defective in attributing too much to a peripheral cause which may be only accessory, and overlooking an efficient cause—namely, a special condition of the respiratory centre itself. It is admitted that this centre has a distinctly automatic, as distinguished from a reflex, function. Without going into the theory proposed by Rosenthal of the existence of two conflicting forces in the respiratory centre—one tending to the generation of respiratory impulses, the other opposing this tendency—it must be admitted that, to enable the ganglionic cells of the centre to discharge respiratory impulses, they must receive a normal supply of healthy blood. If arterial anæmia exist, there must necessarily be a diminution or loss of their activity. This anæmia may be produced by any of the conditions which result in lowered arterial tension, as in dilated aorta, aortic insufficiency, certain forms of pericarditis, and fatty degeneration of the heart. Direct pressure, too, on the medulla itself



may also cause anæmia of the centre; so likewise a reflex irritation affecting the calibre of the arteries in the medulla, as from a cerebral tumour, basilar meningitis, or uræmia. The occurrence of such a condition seems probable from the fact that Cheyne-Stokes' breathing has been met with in all the lesions named; furthermore, a closely allied abnormality of respiration has been observed in sleep under apparently normal states; moreover, this form of breathing can be artificially produced in rabbits by the administration of a toxic dose of aconite, the normal type being restored by the administration of an antagonistic dose of belladonna or strychnia. With a defective supply of arterial blood the activity of the cells of centre becomes rapidly exhausted, just as the current in a galvanic battery ceases to pass from deficient chemical action, or from the polarisation of the plate by over-use. During the period of rest the activity of the centre is restored, whilst the stimulus to its action is greatly intensified by the long respiratory pause. The ganglionic cells are thus thrown into a state of great activity, progressively rapid and forcible respirations follow, which, as the centre approaches the period of exhaustion, become less and less marked, and finally cease. The arterial anæmia in the medulla is, of course, associated with venous engorgement. There is sufficient evidence to show that this venous engorgement acts as a stimulant to the vasomotor centre, which is in the immediate neighbourhood of the respiratory one. The irritation of the vasomotor centre causes a constriction in the small arteries, especially those of the splanchnic area, which is followed by a rise of arterial pressure and an increase in the force of the heart's beat. This, I believe, will be found to be a constant phenomenon in Cheyne-Stokes' respiration during the period of apnœa. Furthermore, the experiments of Ludwig and Thiry prove that an increase of pressure in the heart and arteries is followed by an increased rapidity of the pulse—a circumstance which has been also noted as constant during the apnœal period.

Although, therefore, this case apparently goes to support Dr. Hayden's theory that the cause of this form of breathing is a dilated and atheromatous aorta, still I consider this condition can only be regarded as one of the many accessory circumstances which help to produce the respiratory lesion in question.

ART. VI.—*A Case of Aortic and Mitral Valve Disease; Secondary Mitral Valvulitis; Direct Venous Pulse on Back of Hands; Purpura; Herpes Zoster Frontalis.*<sup>a</sup> By WALTER G. SMITH, M.D.; Vice-President of the College of Physicians; Physician and Pathologist to the Adelaide Hospital.

A RETROGRADE venous pulse in the jugular veins is a matter of daily clinical observation, and is accepted as an indication of absolute or relative insufficiency of the tricuspid valve. It is, however, rare for the venous wave to be perceptible beyond the confines of the neck—*e.g.*, in the veins of the face, or for it to travel into the subclavian vein, and thence to be transmitted into the superficial veins of the upper extremity. Still more rarely have we an opportunity of noting, by sight and touch, a *direct* venous pulse—*i.e.*, a venous wave in the direction of the blood stream, a phenomenon which occurs “when the impulse generated by the contraction of the left heart is not abolished in the capillaries, but passes through the latter into the veins.” Quite recently a case came under my observation that, in my belief, exhibited this curious symptom, which possibly is not unfamiliar to some of my hearers, and which, indeed, Balfour states is frequently seen in many cases of aortic disease (“Diseases of the Heart,” 1876, p. 63). The case is further of interest in illustration of the ætiology of mitral valve disease. From examination of the heart it may be inferred that the mitral valvulitis, which it will be seen [recent specimen exhibited] is limited to the aortic flap of the bicuspid valve, was determined by the increased pressure and strain upon that valve involved in the aortic reflux and consequent dilated hypertrophy of the left ventricle, and in part, perhaps, by extension of the inflammatory process from the aortic valves.

I will now read the case from notes taken by Mr. T. Lane:—

CASE.—James K., aged thirty-seven years, was admitted into the Adelaide Hospital under my care on the 25th of November, 1880. He was a strongly-built man, and had enjoyed excellent health until nine years ago, when he contracted rheumatic fever while working in the mines near San Francisco. He was treated in the hospital there, was discharged apparently well, and returned to Ireland, where he continued to work as a labourer.

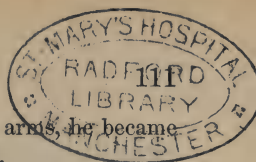
In the autumn of 1880 he suffered from a second attack of rheumatic

<sup>a</sup> Communicated to the Medical Society of the King and Queen's College of Physicians, Wednesday, January 5, 1881. [For the discussion on this paper, see p. 171.]

fever, for which he was treated in the Adelaide Hospital, and it was then discovered that he had three cardiac murmurs—mitral regurgitant, together with aortic obstructive and aortic regurgitant. After his discharge he spent a fortnight in the Convalescent Home, and thence went to work in the County Kildare, with, as he said, a very heavy cold upon him. When readmitted to hospital he was very ill, suffering from pain in the left side, with great dyspnoea, and his feet and ankles were swollen. Temperature, 104°; pulse, 126; respirations, 38.

A hypodermic injection of morphia was given, and a mixture prescribed containing belladonna, digitalis, and quinine. Next day he seemed better, and the urgent symptoms were diminished.

*Physical Signs.*—Dulness below the right scapula, with marked mucocrepitus. Whiffy breathing in front over the upper part of each lung. The area of cardiac dulness was greatly increased, and the apex-beat was situated considerably below and to the left side of the nipple. The three murmurs presented the same characters as on the former occasion, and a distinct systolic thrill was felt. The carotid arteries pulsated violently, and the radial and temporal pulses were highly characteristic of advanced inadequacy of the aortic valves. With the ophthalmoscope I obtained a good view of the optic disc on more than one occasion, but failed to detect retinal pulsation. Distrusting my own observation upon this point, I asked the assistance of Mr. Swanzy, who likewise was unable to see anything abnormal in the retinal circulation. The urine was loaded with lithates, and albuminous to about one-fourth. Sputum scanty, viscid, and rusty. His fingers were bulbous-tipped to a remarkable degree, and the knobbed and glazed terminal phalanges could not fail to attract attention. It was also noted with interest that he was affected with herpes zoster frontalis on the left side. This eruption had appeared a few days before admission, and extended into the hairy scalp. The supra-orbital patch was scabbing over, and left depressed white cicatrices. The eye was not implicated, and the eruption did not extend to any branch of the nerve below the supra-orbital foramen. I may remark, in passing, upon the rarity of this, the most serious form of herpes, in Dublin, for I have not met with more than four or five cases of it. His condition fluctuated for a few days, one day better and another worse, and he suffered much from a cluster of external piles. A week after admission it was noticed that his conjunctivæ were yellow, and bile was detected in the urine by the chloroform (Cunisset) and iodine (Maréchal) tests, whereas the nitric acid test failed to do so. At the same time numerous small purpuric specks and patches appeared on the arms and legs. Upon the back of the trunk the hæmorrhages were very marked, especially on the left side, and showed themselves as narrow stripes crossing each other in all directions, and evidently owed their form to pressure from the folds of the shirt and bed-clothes. The



purpura continued to increase, vibices developed on the arms, he became very restless, and died on the morning of December 6th.

The day after his admission, while engaged in examining him, I was struck with an appearance of pulsation in the veins on the back of the hand. Closer inspection quickly showed that the pulsation was not transmitted from any artery, for it was visible in all the principal veins on the back of each hand and for about three or four inches up the forearm, when it was gradually lost to sight. The pulsation was rhythmical and regular. So marked was it that it could be seen at a distance of several feet by members of the class who were standing at the patient's bedside, and I, as well as several others, could readily appreciate the pulsation by touch. The tension, however, was so low that it appeared useless to attempt taking a sphygmographic tracing. I carefully examined the finger nails on several occasions, but was unable to perceive any traces of blushing or paling in the sub-ungual capillaries. When pressure was applied over a pulsating vein the result of the experiment invariably was to stop the pulsation *between the spot compressed and the heart*. Owing to the powerful arterial undulations in the carotids, venous pulsation in the neck could not be clearly made out. The venous pulse on the hands was visible and palpable for nine or ten days—in fact, until shortly before his death. Dr. C. J. Nixon, who was interested in the case, kindly came up to the hospital, and saw and felt the venous pulse on the hands.

The autopsy was made on the day of the patient's death. The spleen was adherent to the left hypochondrium, and weighed  $1\frac{1}{4}$  lbs. It was much enlarged, dense, and greatly congested. Upon section it exhibited some old yellow infarcts, and a large recent one. The left kidney weighed 10 oz.; the right,  $9\frac{1}{2}$  oz. These organs were congested, and seemed to be in the early stage of the large fatty kidney. The liver was nutmeggy, and weighed 4 lbs. 3 oz. The left lung weighed 2 lbs., and was oedematous and intensely congested. The right lung weighed 1 lb. 10 oz.; it was brownish-red, tough, and leathery, and much congested. The heart was very much enlarged, and weighed 1 lb.  $5\frac{1}{2}$  oz. Purpuric spots were seen about the base. The right auricle contained yellow clots. The tricuspid and pulmonary valves appeared normal in texture. The tricuspid valve scarcely admitted the tips of five fingers. The left ventricle was hypertrophied, and the mitral valve admitted readily the tips of four fingers. The posterior mitral flap exhibited little or no change, but the anterior or aortic curtain was thickened, and closely studded on both surfaces with nodules and papilliform growths and vegetations. Water freely passed back through the aortic valves, all of which were so diseased and covered with shaggy vegetations as to be scarcely recognisable. A little above one of the semilunar valves there was a small aneurismal bulging about half an inch in diameter. The aorta was not atheromatous.



With this case it may be useful to compare the interesting case of pulsation in the veins of the upper extremities recorded by Dr. Charles Benson in *The Dublin Journal of Medical Science*, Nov., 1835 (Vol. VIII., First Series, 1836, p. 324). Distinct pulsation was observed in every superficial vein of the two upper extremities. The veins were prominent, and their motion was easily seen, and by some the pulsations could not only be seen but felt. The day before death a few ounces of blood were taken from the cephalic vein near the bend of the arm, and "the blood flowed distinctly *per saltum*." Extreme mitral narrowing and advanced aortic valve disease were found *post mortem*. The right ventricle was much dilated and hypertrophied; "the left ventricle was dilated, its walls a little thickened, but softer and paler than those of the right." Dr. Benson was of opinion that the pulsation in this case was regurgitant, and Dr. Stokes, in referring to the case ("Diseases of the Heart," p. 202), concurs with him in attributing the pulsation to the condition of the right ventricle. But, notwithstanding such high authority, it seems to me, from study of the case, that the facts narrated by Dr. Benson will bear another interpretation, and that his case supports the opinion that the pulsation was derived from the *left side* of the heart, the possibility of which, in certain cases, Dr. Stokes was not prepared to deny. For be it observed that the patient was in a very debilitated condition, the venous pulse followed that of the radial artery by an appreciable interval of time, the venous valves acted perfectly when tested, and; lastly, the woman was the subject of aortic incompetence. Although the exact diagnosis is not stated, the existence of aortic regurgitation appears plainly from the account given of the physical signs during life and of the *post mortem* lesions. Guttmann remarks ("Handbook of Physical Diagnosis," p. 232) that pulsation in the veins on the back of the hand and the dorsum of the foot, to which Quincke<sup>a</sup> has directed special attention, "may appear in those who are in perfect health, but is most common in cases in which the pressure within the arteries is pathologically increased and suddenly diminished, particularly, therefore, in aortic insufficiency, but also, as Quincke, and more recently Peter and Broadbent have shown, in various other conditions characterised by a certain degree of relaxation of the arteries." In my own case it will be seen that the conditions existing in the patient were such as are considered favourable for

<sup>a</sup> Beobachtungen über Capillär- und Venenpuls. Berliner klin. Wochensch. 1868. No. 34.

the transmission of the arterial pulsation into the venous system, however difficult it may be to realise the mechanism of such an occurrence. The man was in a state of extreme exhaustion, he was affected with well-pronounced aortic regurgitant disease, and the left ventricle was powerfully built and acted strongly. Moreover, pressure upon the vein stopped the pulsation between the part compressed and the heart, so that it is difficult to see how it could have been caused by regurgitation from the right auricle, especially as the pulsation could not be perceived in the larger veins of the elbow or arm.

More than fifty years ago Dr. Charles Davis reported a case of remarkable pulsation in all the veins of a girl, aged six years, labouring under acute hydrocephalus, and from observation of a similar result from pressure was led to the conclusion that there could be no doubt of the fact "that the pulsation had been continued from the heart, through the arteries and capillaries to the veins." Dr. Davis likewise remarked that compression of the arteries completely arrested the venous pulse (*Dubl. Hosp. Reports*, Vol. IV., 1827, p. 272). I may here also refer to two cases of venous pulsation mentioned incidentally by Dr. Graves in a paper published in September, 1834, entitled "Observations on the Treatment of various Diseases" (*Dublin Journal of Medical Science*, Vol. VI., First Series, 1835, p. 54). He writes thus:—"In the case of a gentleman labouring under pneumonia, attended by Mr. M. Collis and myself, the action of the heart was very powerful, and a *distinct pulsation*, corresponding to each stroke of the left ventricle, was perceptible in all the veins of the back of the hand. Mr. Crampton witnessed this curious phenomenon.

"A lady residing in Parliament-street was attacked with very acute peritonitis; venous pulsation was in her case also quite evident. It was seen by Dr. Ireland, Mr. Crampton, and myself. These are the only cases of distinct pulsation of the veins of the extremities which I have seen."

In the *London Medical Gazette* for June, 1832, Dr. Ward relates the case (quoted by Dr. Benson, *loc. cit.*) of a woman in whose hands and arms venous pulsation was observed for three days. The patient had lost large quantities of blood from an incipient pneumonia, and was further debilitated by miscarriage. He attributed the pulsation to the "excessive reaction of the heart pushing the thin and impoverished blood through the capillaries straight on into the veins."

In the well-known essay on the "Safety Valve Function of the Heart" (*Guy's Hosp. Rep.*, Vol. II., 1837, p. 104), Mr. T. Wilkinson King discusses the subject of the veins in health and disease, and expresses his strong conviction, founded upon personal observation and experiment, of the frequency of the occurrence of visible direct venous pulsation in healthy subjects. In illustration of pathological venous pulsation Mr. King contributes some facts which deserve attention:—"In pursuit of the same study," he writes, "I was attending Dr. Bright in his visit to the wards of the hospital, and found two men with visibly pulsating veins on the backs of their hands. They were both five-and-thirty years of age. The first presented the most striking evidence. The doctor not only saw, but thought he could feel, the venous diastole; the wrist being all the while embraced with some firmness, to render the veins large. The patient had an hypertrophic heart; his veins were rather few. In the second instance, which was less marked, the man had had renal anasarca for sixteen days. His heart probably was not quite sound. The pulse was soft, and tolerably good. He was perspiring profusely. The dorsal veins of the hand were pretty numerous and large, and they were covered with abundance of hair, which was remarkable, for the reason that the veins not only beat visibly in many places, but that particular hairs, which were well adapted for the purpose, seemed to form so many natural sphygmometers. It was here also necessary to enlarge the veins by gently grasping the wrist."

Mr. King expresses the anticipation that more careful observation, even with the unassisted eye, will detect pulsating veins more frequently than has hitherto been done, and even render this fact available in diagnosis. Alluding to those rare cases of disease in which the venous pulse is admitted to exist by physicians, although it has been seen but by a very few, Mr. King proceeds to adduce the only unquestionable instance of such a case which had fallen within his own experience.

A little girl, eleven years of age, who had suffered both privations and ill-treatment, became the subject of purpura in diffused patches, attended with hæmorrhages and a febrile state, during which, on very gently grasping the wrist in feeling the pulse, he observed for several days the numerous and rather full veins of the hand both prominent and beating. There was, in all of them, a very distinct diastole and systole, synchronous, as they seemed, with those of the radial pulse. The patient appeared to be in a

convalescent state, when she was rather suddenly found to grow worse, as if from internal hæmorrhage, and was carried off in a few days. . . . The blood was watery, and the kidneys were affected with a pale hypertrophy.

After giving references to earlier notices of similar cases by Haller and others, Mr. King remarks that these cases do not appear to admit of any tenable objections. The unnatural pulsation was well marked and well observed; and, from a review of the recorded cases, I think, with Mr. King, no other conclusion is admissible than that the pulse was derived from or through the capillaries.

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ART. VII.—*On the Climate of Kingstown.* By DR. J. BYRNE POWER, L.K.Q.C.P., &c.; Physician to St. Michael's Hospital, Kingstown; Medical Superintendent of Health and Consulting Sanitary Officer, Kingstown.

ON appointment to my present office, being convinced of the importance of studying the meteorology of the Kingstown township as the first necessary step towards forming a true estimate of its sanitary condition, I devoted some time and attention to its investigation, and some of the results obtained I have thought of sufficient interest to bring before the profession. Through the kindness of Mr. Mitchell, the observer of the late Meteorological Station at Kingstown, I was able to obtain the records of observations made there from the 1st January, 1873, to December, 1879, and continued up to the present time at my request. When considering the meteorology of any locality as affecting the public health, the following are the principal branches of inquiry—viz., mean temperature, range of temperature, direction of wind, and rainfall. It is well to compare our observations with those taken at some other station in the same latitude. For the purpose of comparison I have selected the observations taken at the Ordnance Survey Office, Phoenix Park, the records of which for the last eight years have been kindly furnished to me by Lieut.-Colonel Martin, R.E. In making such a comparison it will be necessary to take into consideration the local circumstances of the two stations. As regards Phoenix Park Observatory, compared with Kingstown, the chief difference to be noted is the greater distance from the coast-line of the former station.

On reference to Table I., which gives the mean temperature at



both stations for each month during the last eight years, we find the temperature at Kingstown greater than at Phoenix Park all the year round, but markedly so during the winter months. This is illustrated by Diagram I.

TABLE I.

<i>Mean Temperature—Kingstown.</i>													
Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual
1873	44·3	39·9	42·9	46·7	51·6	58·9	61·3	60·7	55·0	49·6	47·1	47·7	50·5
1874	44·3	44·0	46·9	50·8	52·0	56·6	62·6	59·8	57·2	51·7	48·2	39·2	51·1
1875	46·8	42·4	44·0	48·3	55·0	57·0	58·8	62·5	59·0	50·4	45·8	42·4	51·0
1876	44·6	43·8	41·1	46·4	50·2	56·5	61·9	60·4	55·1	53·7	46·8	45·5	50·5
1877	44·1	45·3	42·0	45·9	49·3	58·2	59·0	58·9	54·5	51·9	46·6	43·7	49·9
1878	43·5	44·5	44·7	47·6	53·0	57·9	61·4	60·7	57·2	52·6	39·8	35·1	49·8
1879	36·5	39·8	42·3	44·1	48·2	55·3	56·9	58·2	55·0	50·4	45·5	39·7	47·6
1880	40·2	46·1	46·7	48·5	52·1	57·2	59·5	62·1	60·4	52·9	46·2	44·0	51·3
Means	43·0	43·2	43·8	47·3	51·4	57·2	60·2	60·4	56·7	51·6	45·7	42·2	50·2
<i>Mean Temperature—Phoenix Park.</i>													
1873	41·7	37·6	42·8	47·4	50·7	58·3	60·4	59·8	53·6	47·9	44·1	42·4	48·9
1874	39·4	41·4	45·9	49·3	50·4	56·5	61·0	58·8	55·1	49·6	45·2	35·3	49·0
1875	45·9	39·6	43·2	47·2	54·1	56·1	57·9	61·1	57·8	49·4	42·8	39·6	49·6
1876	41·9	42·3	40·4	46·8	49·4	56·1	61·1	60·0	54·9	52·5	44·8	43·5	49·5
1877	42·7	44·6	42·4	46·0	49·8	58·5	59·0	58·9	53·4	51·4	44·8	41·7	49·4
1878	41·9	44·6	44·0	49·0	53·5	59·0	62·1	60·9	57·0	51·2	37·8	31·7	49·3
1879	33·9	39·6	42·2	43·7	48·6	56·0	56·6	56·1	52·5	48·1	42·0	36·3	46·3
1880	39·0	43·3	43·7	44·2	49·8	55·4	57·9	59·6	56·8	43·9	42·4	40·8	48·1
Means	40·8	41·6	43·1	46·7	50·8	57·0	59·5	59·4	55·1	49·2	43·0	38·9	48·8

This difference is very remarkable when we consider the small distance between the two stations, and demonstrates the great

modifying influence of sea temperature upon the climate of places in immediate proximity to the coast. This is illustrated by Diagram II.

The mean temperature at Kingstown is remarkably high, and in Table II. will be found a comparison between the mean temperature at Kingstown during the winter months and at the different favourite winter health resorts in England and the Channel Islands for the years 1873-77.<sup>a</sup>

TABLE NO. II.—*Mean Temperature during Winter Months.*

STATIONS	Nov.	Dec.	Jan.	Feb.	March	Means
1873-7.	°	°	°	°	°	°
Scilly - - -	50·1	47·1	47·8	46·9	47·5	47·9
Torquay - - -	49·0	45·5	46·6	44·2	46·4	46·3
Penzance - - -	47·6	45·3	45·9	45·0	45·3	45·8
Guernsey - - -	48·4	44·4	45·3	43·4	43·3	45·0
Barnstaple - - -	46·6	43·1	45·0	43·8	44·5	44·6
Kingstown - - -	46·9	43·7	44·8	43·1	43·4	44·4
Ventnor - - -	47·7	42·7	44·8	42·8	44·0	44·4
Llandudno - - -	45·1	42·9	44·1	42·3	43·3	43·5
1874-7.						
Ramsgate - - -	44·1	40·1	41·5	39·8	41·8	41·5
Hastings - - -	44·1	39·7	41·6	40·0	40·8	41·2
Means - - -	47·0	43·4	44·7	43·1	40·0	44·5

From this it will be seen, as regards mean temperature, that Kingstown occupies a position equal to that of Ventnor. As regards range of temperature, the differences between Kingstown and Phoenix Park are equally remarkable, and on reference to Table III., which gives the mean diurnal range of temperature at both these stations for each month from January, 1873, to December, 1880, it will be seen that the mean range of temperature at Kingstown is very small when compared with that at Phoenix Park.

<sup>a</sup> All the meteorological data of stations in England and the Channel Islands contained in Tables II., IV., V., and IX., have been taken from a paper by John W. Tripe, Esq., M.D., published in the Quarterly Journal of the Meteorological Society for April, 1878.

TABLE III.

<i>Mean Diurnal Range of Temperature—Kingstown.</i>													
Year	January	February	March	April	May	June	July	August	September	October	November	December	Means
1873	7·8	7·6	8·0	8·9	8·8	10·5	10·7	9·7	10·9	10·2	7·2	6·1	8·9
1874	9·2	7·2	9·7	10·9	8·6	10·6	10·2	10·3	9·2	9·1	7·8	7·7	9·2
1875	7·2	6·4	6·5	9·4	11·5	10·7	10·0	9·0	9·3	10·8	7·3	5·7	8·6
1876	6·5	7·2	8·8	8·4	8·0	10·0	10·9	9·6	7·9	5·9	6·0	6·5	8·0
1877	8·8	8·2	8·5	6·5	7·4	9·8	9·9	8·4	8·4	9·3	8·2	7·6	8·4
1878	7·8	6·0	8·5	8·2	9·2	7·3	9·3	8·0	9·4	7·8	9·2	7·2	8·2
1879	6·4	6·7	11·3	9·2	11·8	12·0	10·9	13·0	12·0	10·0	7·0	10·7	10·1
1880	9·2	10·2	12·8	11·4	12·7	14·3	14·0	6·4	5·0	11·4	10·6	9·5	10·6
Means	7·9	7·4	9·3	9·1	9·7	10·6	10·7	9·3	9·0	9·3	7·9	7·6	8·9
<i>Mean Diurnal Range of Temperature—Phoenix Park.</i>													
1873	11·1	12·6	13·9	18·5	20·3	20·6	21·0	17·6	19·3	16·5	12·0	9·0	16·0
1874	6·3	14·7	15·1	20·4	19·2	23·4	22·1	19·9	17·6	13·9	13·7	11·8	16·6
1875	12·5	12·9	12·1	21·7	21·6	20·1	21·3	19·8	17·0	14·0	13·0	12·2	16·5
1876	12·8	13·8	15·0	17·6	21·7	21·1	24·3	21·7	15·0	13·0	12·3	10·8	16·6
1877	9·5	12·8	16·1	14·3	18·2	20·7	18·1	17·2	17·8	18·1	14·3	12·4	16·2
1878	11·6	11·0	15·7	18·7	29·6	19·0	20·4	16·4	17·0	16·2	14·8	13·6	16·2
1879	11·6	12·4	14·4	13·5	20·1	18·8	12·3	16·0	15·2	11·4	10·7	15·4	14·4
1880	13·1	13·0	15·1	14·1	16·5	15·1	15·0	16·5	14·8	14·2	12·6	9·9	14·2
Means	11·1	12·9	14·7	17·3	20·9	19·8	19·3	18·1	16·7	14·7	12·9	11·9	15·8

This fact, as regards its bearings upon the public health, is of the greatest importance, for there is no doubt that great and sudden changes of temperature are very trying to most constitutions. On reference to Table IV. we find, as regards this important matter of daily range during the winter months, that Kingstown occupies a most favourable position when compared with the favourite winter health resorts in England and the Channel Islands,

being only inferior in this respect to two stations—Scilly and Penzance.

TABLE IV.—*Temperature. Mean Daily Range.*

STATIONS	Nov.	Dec.	Jan.	Feb.	March	Means
1873-77.	o	o	o	o	o	o
Scilly - - -	4.9	6.1	6.3	5.4	7.1	6.0
Penzance - -	6.2	5.2	5.4	5.3	7.6	6.0
Kingstown - -	7.3	6.7	7.9	7.3	8.3	7.5
Guernsey - -	7.4	7.6	7.8	7.5	9.1	7.9
Ventnor - -	8.7	6.7	7.0	7.7	9.9	8.0
Torquay - -	9.3	9.0	8.2	7.6	10.1	8.8
Llandudno - -	8.6	8.0	10.1	9.2	11.3	9.5
Barnstaple - -	10.1	9.1	9.4	9.0	11.1	9.8
1874-77.						
Hastings - -	8.9	6.3	7.4	7.8	10.4	8.1
Ramsgate - -	9.8	7.9	10.2	8.3	11.8	9.6
Means - -	8.1	7.3	8.0	7.5	9.7	8.1

TABLE V.—*Temperature. Monthly Range.*

STATIONS	Nov.	Dec.	Jan.	Feb.	March	Means
1873-77.	o	o	o	o	o	o
Scilly - - -	18.5	18.5	18.2	18.0	20.5	18.7
Penzance - -	23.2	21.7	18.1	21.0	22.4	21.3
Guernsey - -	23.7	24.2	22.2	22.1	25.8	23.6
Kingstown <sup>a</sup> - -	23.8	27.14	24.8	24.0	25.4	25.1
Ventnor - -	28.7	25.2	21.5	23.0	27.7	25.2
Torquay - -	27.2	26.2	23.0	24.7	25.4	25.3
Llandudno - -	29.3	27.0	28.5	28.5	28.1	28.3
Barnstaple - -	31.8	29.8	28.1	25.0	30.3	29.0
1874-77.						
Hastings - -	29.4	26.8	26.9	26.3	29.5	27.8
Ramsgate - -	32.3	32.3	32.6	30.7	28.9	31.4

In Table V. I have compared Kingstown with the abovenamed English and Channel Islands stations as regards monthly range of temperature, from which it will be seen that Kingstown enjoys an

<sup>a</sup> The Monthly Ranges for Kingstown are calculated for the years 1876-80, and are therefore not strictly comparable with those for the years 1873-77.



advantage in this respect over all the stations in England excepting Penzance.

As showing the absence of extremes of low temperature during the winter months at Kingstown the following particulars are worthy of note:—During the severe frost of December, 1879, the thermometer descended as low as  $22.6^{\circ}$  at Torquay,  $22^{\circ}$  at Ventnor,  $20.9^{\circ}$  at Ramsgate,  $19^{\circ}$  at Bournemouth and Eastbourne, and  $17.6^{\circ}$  at Hastings, while at Kingstown and Llandudno it only reached  $23^{\circ}$ . During the same month the thermometer stood below  $32^{\circ}$  on 24 days at Ramsgate, on 21 days at Hastings, on 20 days at Eastbourne, and on 19 days at Torquay and Bournemouth, while it only reached below  $32^{\circ}$  on 12 days at Kingstown, on 11 days at Ventnor, and on 10 days at Llandudno.<sup>a</sup>

We next come to consider the subject of the direction of the wind; and for this purpose I have compiled Table VI., giving the number of days in each month from January, 1873, to December, 1880, upon which the wind, at a fixed hour each day, blew in a certain direction at Kingstown and at Phoenix Park. In constructing this Table I have considered it well to distinguish the land from the sea breezes, or, in other words, the westerly from the easterly winds, as the distinction may have an important influence on the public health.

On looking over this Table the first point that strikes us is the great prevalence of westerly and southerly winds, which is in accordance with the result of all observations in these countries. The easterly winds, proverbially harsh in these islands, fortunately for us occur in minimal frequency during the two coldest months of the year—January and December—not attaining their maximum at Kingstown until so late as the month of May, though at Phoenix Park the maximum is reached in April—in fact, during the summer months they are vastly more frequent than during the winter. Even assuming that the east wind is pernicious, the fact of its prevalence during the early summer months—the portion of the year in other respects most favourable to health—might lead us to anticipate that its effect would be but slightly traceable in the death rate; and this we find to be the case on reference to Table VII., which gives the number of deaths from all causes, and also those from diseases of the respiratory organs and phthisis, for four weeks in each month from January, 1873, to December, 1880. This is illustrated by Diagrams III. and IV.

<sup>a</sup> On the Frost of December, 1879, over the British Isles. By William Marriott, F.M.S. Quarterly Journal of the Meteorological Society, April, 1880.

DIAGRAM I.—Mean Temperature at Kingstown and Phoenix Park for Eight Years, from 1873 to 1880.

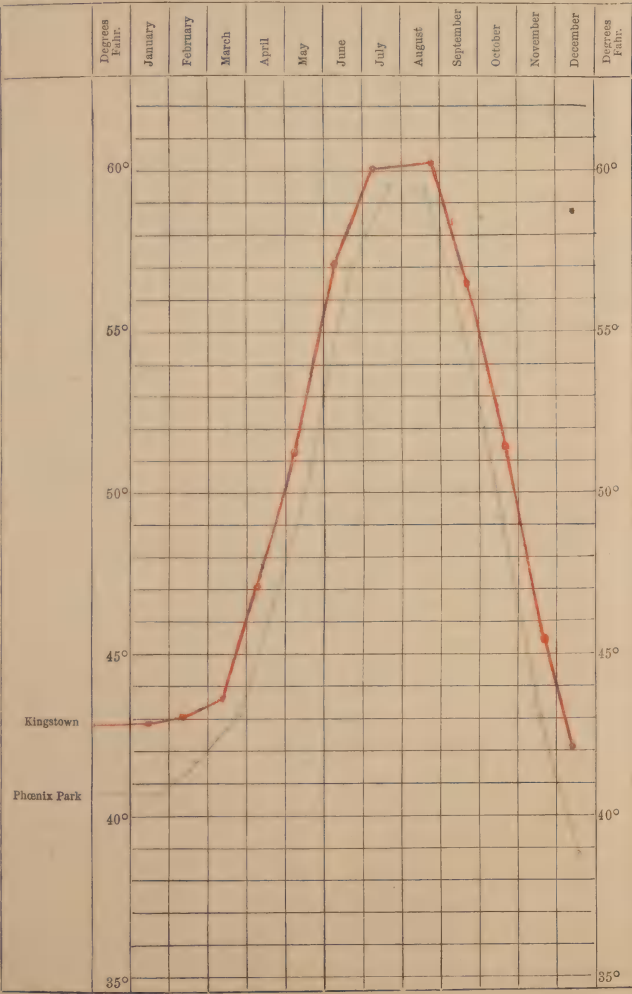
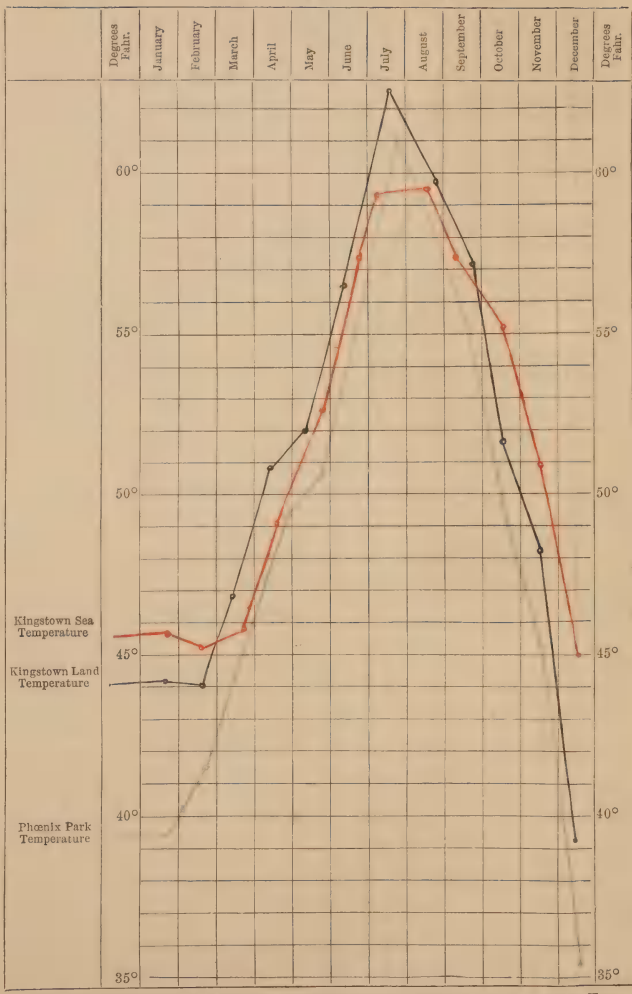


DIAGRAM II.—Mean Temperature of Sea and Atmosphere at Kingstown, and of Atmosphere at Phoenix Park, for One Year, 1874.



The sea temperatures at Kingstown are taken from an article by Robert H. Scott, Esq., F.R.S., published in the Quarterly Journal of the Meteorological Society for July, 1875.

DIAGRAM III.—Showing Average Number of Deaths in Kingstown from all Causes, and from Diseases of the Respiratory Organs and Phthisis, for Four Weeks in each Month, from January, 1873, to December, 1880.

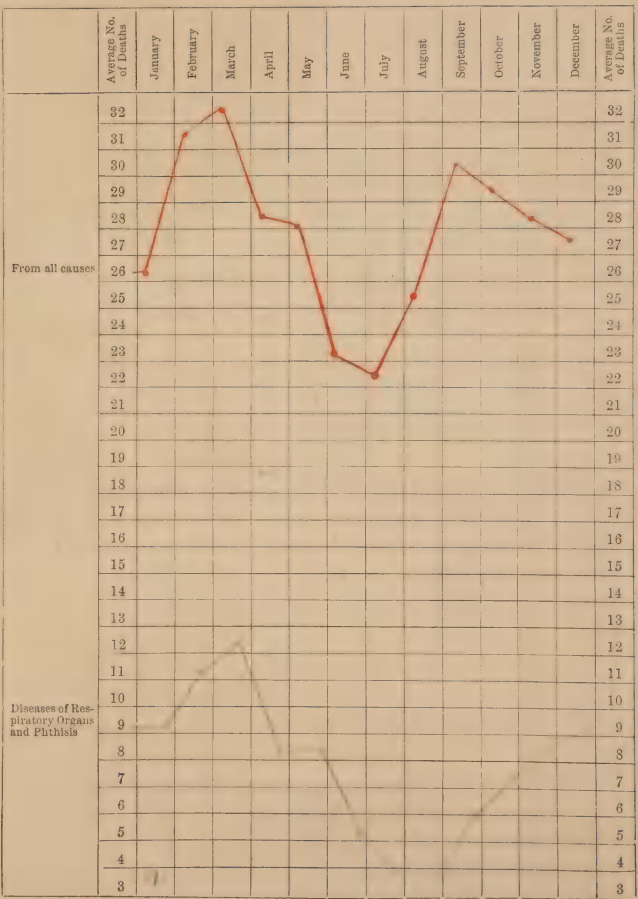


DIAGRAM IV.—Showing Prevalence of Easterly Winds at Kingstown, during Eight Years, from 1873 to 1880.





TABLE VI.

*Direction of Wind at Phoenix Park for Eight Years, 1873-80.**Number of days it blew at 9 a.m. in certain directions.*

MONTHS	Total Sea Breezes	N.	SEA BREEZES			S.	LAND BREEZES			Total Land Breezes	CALMS
			N.E.	E.	S.E.		S.W.	W.	N.W.		
January - -	58	4	4	23	31	23	78	57	10	145	18
February - -	46	6	9	20	17	17	56	59	18	133	23
March - -	67	7	8	34	25	18	40	74	29	143	13
April - -	102	17	23	46	33	14	27	44	21	92	15
May - -	86	15	29	39	18	12	41	52	25	118	17
June - -	78	10	25	30	23	24	51	50	15	116	16
July - -	38	10	17	12	9	18	73	76	24	173	9
August - -	69	10	20	26	23	20	45	71	20	136	13
September - -	44	15	6	24	14	20	54	66	24	144	14
October - -	64	10	17	22	25	24	38	82	12	132	18
November - -	64	13	16	28	20	16	43	67	22	132	17
December - -	39	5	5	16	18	14	69	82	22	173	17

*Direction of Wind at Kingstown for Eight Years, 1873-80.**Number of days it blew at 11 a.m. or at 1 30 p.m. in certain directions.*

January - -	38	8	1	22	15	86	8	100	4	112	4
February - -	52	16	1	28	23	48	4	74	13	91	2
March - -	86	24	13	47	26	33	4	84	17	105	5
April - -	83	37	11	52	20	54	5	44	7	56	1
May - -	105	37	9	73	23	35	7	53	10	70	1
June - -	81	21	9	43	29	63	12	53	12	77	8
July - -	68	23	2	36	30	39	5	89	16	110	1
August - -	91	12	9	59	23	47	3	84	11	98	0
September - -	62	18	7	37	18	44	10	75	17	102	5
October - -	60	26	6	33	21	45	7	88	19	114	4
November - -	56	20	10	34	12	44	5	91	19	115	5
December - -	32	8	2	18	12	46	12	132	10	154	7



TABLE VII.

<i>Number of Deaths in Kingstown from all causes for four weeks in each month, from January, 1873, to December, 1880.</i>												
Year	January	February	March	April	May	June	July	August	September	October	November	December
1873	16	14	35	23	14	22	14	15	30	26	22	21
1874	21	35	30	28	14	18	19	23	23	20	23	28
1875	25	25	18	26	21	15	23	25	36	30	26	27
1876	23	31	33	29	22	21	27	19	33	30	41	32
1877	36	37	49	30	37	26	23	23	20	32	26	22
1878	25	35	23	25	27	22	23	40	27	40	26	32
1879	39	43	31	37	50	33	29	20	23	39	22	27
1880	23	32	41	28	39	29	21	40	53	21	40	31
Average	26	31·5	32·5	28·2	28·0	23·2	22·4	25·6	30·6	29·7	28·2	27·5
<i>Deaths from Diseases of Respiratory Organs and Phthisis for four weeks in each month, from January, 1873, to December, 1880.</i>												
1873	8	5	16	6	2	3	5	3	6	6	4	5
1874	8	11	9	5	4	5	2	3	3	4	5	10
1875	9	13	7	11	3	3	2	1	7	3	8	6
1876	8	13	16	12	7	4	3	2	5	4	9	10
1877	14	14	22	12	23	8	7	6	5	6	10	7
1878	13	11	7	4	8	4	5	0	3	9	8	16
1879	10	18	12	10	12	12	4	5	8	14	7	11
1880	5	7	11	5	9	2	3	10	10	11	14	7
Average	9·4	11·5	12·5	8·1	8·5	5·1	3·9	3·7	5·9	7·1	8·1	9·0

As regards rainfall, Table VIII., which gives the monthly rainfall at Kingstown and Phoenix Park from the year 1873 to 1880, shows that there is little difference in the total amount which fell during that period.

TABLE VIII.

*Rainfall in inches—Kingstown.*

Year	January	February	March	April	May	June	July	August	September	October	November	December	Yearly Rainfall
1873	3.28	0.47	3.23	0.64	0.91	0.88	3.43	3.98	1.99	2.42	1.58	0.50	23.31
1874	2.03	2.71	0.87	1.13	2.58	0.92	2.30	4.42	2.04	2.55	3.50	3.62	28.67
1875	3.66	2.15	1.02	0.95	1.10	2.36	2.11	1.49	2.95	7.15	3.65	1.23	29.82
1876	0.42	3.10	2.09	1.74	0.67	1.35	0.82	2.58	2.80	5.03	4.18	8.02	32.80
1877	5.27	1.29	1.57	4.00	1.43	1.66	2.97	3.74	2.01	1.10	1.96	2.10	29.10
1878	1.96	1.54	1.04	1.69	4.79	3.28	0.45	6.49	1.93	1.79	0.85	1.40	27.21
1879	2.15	3.35	1.76	2.03	1.82	3.87	3.65	3.47	1.96	1.36	1.41	0.87	27.91
1880 <sup>a</sup>	0.80	3.08	3.54	1.82	0.70	2.34	7.18	1.73	3.30	6.36	2.93	3.35	37.13
Means	2.45	2.21	1.89	1.75	1.75	2.08	2.86	3.49	2.37	3.47	2.51	2.64	29.49

*Rainfall in inches—Dublin (Phoenix Park).*

1873	2.85	0.54	2.70	0.41	1.13	1.20	3.66	4.34	2.44	3.20	2.29	0.77	25.53
1874	2.26	1.86	1.34	1.08	1.99	0.68	2.28	5.09	2.45	2.97	3.23	2.80	27.83
1875	2.03	3.56	1.23	0.95	1.04	3.02	3.03	2.34	3.20	6.66	3.85	1.91	32.82
1876	0.31	3.09	2.30	2.70	7.08	1.54	1.57	2.32	3.20	3.69	3.39	6.38	31.52
1877	3.95	1.61	2.58	3.86	2.15	1.09	3.32	3.73	1.31	1.79	2.71	2.00	30.10
1878	1.24	1.45	1.16	2.36	4.19	5.39	0.71	4.41	1.57	1.86	1.39	2.32	28.04
1879	1.43	3.18	1.95	1.48	2.17	4.24	4.49	2.93	2.46	1.32	1.50	1.30	28.45
1880 <sup>a</sup>	0.69	2.55	3.60	1.90	0.79	2.85	5.40	1.32	2.00	7.91	4.08	3.15	36.24
Means	1.84	2.23	2.11	1.84	2.57	2.50	3.06	3.31	2.33	3.67	2.80	2.58	30.07

It will be seen that the wettest of those years at Kingstown was 1880, in which 37.13 inches fell; the driest being 1873, in which

<sup>a</sup> The rainfall at Phoenix Park and Kingstown during 1880 was excessive. The greatest annual rainfall at Dublin, of which I can find a record, was that of 1846, amounting to 36.11 inches. See paper on the Meteorology of Ireland by Rev. H. Lloyd. Transactions of the Royal Irish Academy, Vol. XXII., p. 472.

23·3 inches fell. At Phoenix Park the wettest of those years was also 1880, during which 36·24 inches fell; the driest was 1873, during which 25·5 inches fell. The two wettest months during those years at both stations were August and October. The two driest months at Kingstown were April and May, while at Phoenix Park January and April were the driest. The greatest monthly rainfall at Kingstown was that of December, 1876, amounting to 8·02 inches; the smallest that of January, 1876, being only 0·42 inch. The greatest monthly rainfall at Phoenix Park was that of October last, amounting to 7·91 inches; and the smallest that of January, 1876, amounting only to 0·31 inch.

In Table IX. I have compared the average rainfall at Kingstown during the winter months with that at the abovenamed English stations, for the years 1873-77. From this it will be seen that the rainfall at Kingstown during the winter is considerably less than that at any one of those stations, and amounts to little more than half that at Penzance.

TABLE No. IX.—*Monthly Rainfall.*

STATIONS		Nov.	Dec.	Jan.	Feb.	March	Totals
1873-77.		In.	In.	In.	In.	In.	In.
Penzance	- -	5·04	6·14	5·97	3·53	2·84	23·52
Guernsey	- -	5·52	5·84	3·96	2·74	2·34	20·40
Barnstaple	- -	3·97	4·37	4·89	2·54	2·68	18·45
Torquay	- -	4·48	4·31	4·37	2·99	2·13	18·28
Scilly	- -	4·12	4·98	3·92	2·13	1·98	17·13
Llandudno	- -	4·24	2·86	4·04	2·69	2·13	15·96
Ventnor	- -	3·89	3·01	3·84	2·41	1·87	15·02
1874-7.	Hastings - -	3·90	3·60	4·08	2·24	2·06	15·88
	Ramsgate - -	3·82	3·12	3·12	2·19	2·11	14·36
Kingstown	- -	2·97	3·09	2·93	1·94	1·76	12·69
Means	- -	4·19	4·13	4·11	2·44	2·19	17·10

This is as might be expected, for the rain-clouds from the Atlantic borne to us and to other stations on the east coast of Ireland by the prevailing westerly and southerly winds are deprived of much

of their moisture before they reach us by contact with the high land over which they pass, whereas at stations situated about the south-westerly extremity of England the rain-clouds are there first tapped by the land, and discharge a great deal of their rain on the spot.

I think I have now shown that the climatic conditions under which we live at Kingstown are comparatively favourable to health, and have proved, as far as meteorological data go, its superiority to some of the most favoured English health resorts.

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#### ELECTRICITY IN HYDROPHOBIA.

M. HARDY detailed a case to the Académie de Médecine. The treatment was begun immediately on the patient's admission. The terminals of the poles of the battery (10 couples of the Trouvé-Callaud pile) were moistened with water without his knowledge (for a single drop falling on the skin or even the sound of a drop falling was sufficient to produce violent spasms), and gently applied to the same spot on the skin. They were slowly moved apart, the negative pole remaining at the upper part of the spinal column. The application lasted twenty minutes. During the last five minutes the lower pole (positive) was made to travel slowly along the spine and the two sides; then both poles were brought over the occiput and back of neck, the negative pole being always uppermost. During the operation the patient felt his mouth fill with saliva which he swallowed freely. Finally the two terminals were brought into contact as at the beginning, and removed without exciting any spasm. There was now entire freedom from spasm, unembarrassed respiration, and a tendency to sleep. Four hours afterwards there was a return of spasm, but after a fresh galvanisation (the positive pole on the convulsed muscles of the neck, the negative in his hand) he could bring the glass to his lips and drink. In the twelve hours subsequently he drank two pints of milk and ate a pound of grapes. There were slight spasms when the grapes touched his lips, but mastication and deglutition were performed normally. On this day the symptoms had so much abated that a doubt was cast on the diagnosis. At four o'clock there was a short galvanisation of the spine. He took milk, and continued to remain at rest till seven, when he had an altercation with the hospital sergeant; he was then seized with spasms, suffocation, and delirium, and shortly afterwards grew comatose and died.—*Bulletin de l'Académie de Médecine.*

S. W.





## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*Practical Histology and Pathology.* By HENEAGE GIBBES, M.B.  
London: Lewis. 1880. Pp. 107.

THE object of the work bearing this somewhat ambitious title is, we are told by the author, "to lay before the practitioner and student of medicine a few concise and simple methods, by which the various tissues of the body may be prepared for examination with the microscope. I do not claim any originality in these methods, but I recommend them, from my own personal experience, as the best, easiest, and cheapest to carry out."

Within these limits a good deal of useful information may be found in the volume by the student of histology, although, as in some other recent works emanating from the same school, we think most of the directions are too elementary for anyone but a beginner, and not sufficiently explicit for him.

In the first chapter, which deals with the microscope, the author praises highly the oil immersion lenses recently made by Zeiss and by Powell and Lealand, giving the preference to the work of the English makers. He also finds that the binocular microscope can be used with advantage with the highest powers, giving a stereoscopic effect to the objects and relieving the eye. How a stereoscopic effect can be got by two precisely similar images on the two retinæ is not easy to understand.

In the chapter on hardening tissues the author strongly recommends Dr. Klein's mixture of two parts of chromic acid (one-sixth per cent.) and one part of methylated spirit. The most valuable sections in the book are those on staining. The great importance of the application of staining fluids as reagents for the tissues, and as means of unravelling their intimate constitution, is very properly dwelt on. Dr. Gibbes has experimented largely with dyes mostly of the aniline series, and has got good results by double and treble staining. He gives a long list of staining fluids, many of which he has found useless, while with others, some of which are little known, his success has been considerable. Unfortunately the

directions for the employment of these dyes are not very precise, and in many cases the reader is told he must just experiment until he hits on the right tint. We are surprised in the double stainings to find no mention of logwood and eosin, in our experience the most generally useful of all double stainings. A treble staining by picro-carmin, rosein, and iodine green, is said to yield results of surpassing beauty.

After describing the different processes of mounting in glycerin and balsam, and the best modes of dissecting some of the common animals in order to remove parts for histological purposes, each tissue and organ is separately considered and the methods to be employed in its examination laid down.

The practical pathology is all contained in a concluding chapter of four pages, in which some directions are given for preparing specimens of morbid tissues. Among the stains to be employed in the study of amyloid degeneration methyl violet is not mentioned. This is, we think, a serious omission.

Although we do not look on this book as by any means the best manual of practical histology in our language, yet still it will be found useful, and particularly in the chapters on staining many valuable hints will be met with which will well repay its perusal.

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*Zeitschrift für Heilkunde, als Fortsetzung der Prager Vierteljahrschrift für praktische Heilkunde.* Herausgegeben von PROF. HALLA, PROF. VON HASNER, PROF. KLEBS, PROF. BREISKY, und PROF. GUSSENBAUER. I. Band. Prag: F. Tempsky. 1880.

THE medical faculty of the University of Prague is among the most distinguished in Europe, and their journal, the *Prager Vierteljahrschrift*, has, since the year 1844, maintained a justly eminent position among medical periodicals. It was fashioned somewhat on the plan of our late lamented contemporary, *The British and Foreign Medico-Chirurgical Review*. It contained original articles, always of great merit, but a large space in each number was occupied by reviews, notices of books, and abstracts of papers in other journals.

The faculty, taking advantage of a temporary interruption in the appearance of the *Vierteljahrschrift*, owing to a change of publishers, has determined to change the name of the journal and remodel its constitution. The new *Zeitschrift für Heilkunde*, of which we have received the first four numbers, is to consist of

original articles only, and is to appear yearly in six instead of four parts.

In the parts before us we have the promise of a publication of great value to all branches of the medical profession. The papers are all either directly practical or with an obvious practical bearing, and subjects of merely theoretical scientific interest are not to be admitted. In accordance with this we find the editors excusing their acceptance of a paper by Dr. Horcicka, on the development and growth of the thyroid gland, by its value in explaining the development of many tumours of this organ.

Our space will not allow of our doing more than giving a list of the papers in the parts before us, but we may say that they are not only varied, as will be seen by their titles, but are all of very great merit and interest. In the first part, after the preface by the editors, we find an article by Prof. Klebs, on the natural families of disease, in which he continues his controversy with Virchow. This is followed by the first portion (continued in the other parts) of a long report on the work of the Medico-Legal Institute of Prague for the last thirteen years, by Dr. Belohradsky. Whoever looks through this report will not fail to contrast the manners and customs of the Prague Institute with those of our Coroners' Courts, very much to the disadvantage of the latter. In a paper on epithelial pearls in the palate of newly-born children, in which he argues in favour of Cohnheim's views as to the origin of tumours by foetal inclusion of superfluous germs, Dr. Epstein combats the retention origin of sebaceous tumours, and looks on them as arising from masses of epidermis misplaced from the time of the original formation of the parts. The part concludes with a paper, by Drs. Kahler and Pick, on that form of aphasia known as "*Worttaubheit*," or "*surdit  verbale*," in which they reply to the criticisms of Dr. Mathieu on one of their former communications.

In the second part are papers on septic affections of the retina, with anatomical observations by Kahler; the article already alluded to on the thyroid gland; a paper of great interest to dentists, on rachitic deformity of the lower jaw, by Dr. Schmid; and a continuation of Dr. Belohradsky's report.

In the third and fourth parts we have an article on the development of the larynx, by Ganghofner; on the operative treatment of carcinoma of the sigmoid flexure, detailing a successful case of removal of the morbid growth by laparotomy, and formation of artificial anus, by Gussenbauer; the conclusion of the medico-legal

report; a paper by Knoll, on myocarditis and the other consequences of section of the two vagi nerves in pigeons; and a communication by Dr. Breisky, on local intra-uterine treatment in puerperal fever, in which he has the usual story to tell of diminished mortality, owing to improved sanitation and employment of antiseptic precautions. Many of the papers are illustrated by well-executed plates, and the print and the paper are good.

In conclusion, we have only to bid the new *Zeitschrift* a hearty welcome, and to wish it as long and as prosperous a career as its predecessor so justly enjoyed.

*The Descriptive Atlas of Anatomy.* In 92 Royal 4to Plates.  
London: Smith, Elder, & Co. 1880.

THIS is a good Atlas, and will be of great service to the student, for whom it has been specially prepared. In the usual text-books of anatomy "muscles, bones, and ligaments are often indistinguishable one from another, and the representations of arteries, veins, and nerves are apt to give him quite erroneous ideas as to which they are, where they come from, and where they are going." The student "is fortunate if he can make out all the reference letters or numbers, and determine to which they belong, and, having done this, he must wade through a complicated reference footnote for information as to the name of the structure. In order to supply the want of the student, the Descriptive Atlas of Anatomy has been prepared. . . . The parts have been copiously named and described *in situ*, and the arteries and veins have been coloured."

The plates are in general well executed and give a clear and correct idea of the various parts. A few of them are, however, decidedly muddy, and exhibit a too free use of the printer's ink. Many of the drawings are quite new, such as an excellent diagram of the arteries of the foot in Plate 68, but many others remind us forcibly of plates in other text-books. The author tells us that in the commencement of the preparation of the work it had been intended to use Latin terms only, but finding this undesirable, "much of the usual hybrid mode of description has been adopted." He does not tell us why he has found it desirable in many places to substitute unusual names for parts, to which the student has become accustomed to apply different terms. Thus we find the innominate artery called the A. anonyma, as in Plate 57, and in Plate 70 the right auricle is labelled the "atrium dextrum." Other



examples of the same kind are to be found through the volume. These are comparatively trifling faults. On the whole we think the atlas will fulfil the desire of the author, and will prove of real service to the student, to whom we cordially recommend it.

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*Lectures on Diseases and Injuries of the Ear.* By W. B. DALBY, F.R.C.S.; M.B., Cantab.; Aural Surgeon to St. George's Hospital. Second Edition. London: J. & R. Churchill. 1880.

THE first edition of this work is so well known and has been so highly appreciated by the profession that we regret so much time should have elapsed since it was exhausted before this second edition was brought out. But little new has been added to the work since it first made its appearance. Some valuable suggestions have, however, been added on the subject of foreign bodies in the ear, and the energetic and heroic methods of removal deservedly deprecated. The author mentions how on two successive days at the hospital he had met with four cases in which the tympanic membrane had been ruptured by attempts of this kind, and in two of these an examination showed that there had been no foreign body in the ear. Whilst giving the preference in all cases to the syringe, which will nearly always prove sufficient, he mentions a method which has been suggested and successfully practised by Dr. Löwenberg, of Paris:—"The end of a rod is dipped in melted glue; the point thus armed is held in contact with the foreign body until the glue has hardened (about twenty minutes suffices for this); the rod is then withdrawn, bringing away with it the foreign body."

In treating of exostosis of the external auditory meatus, it is pointed out that the disease may be found in one canal only or it may be bilateral. The latter case is probably congenital. In the former the author considers that the exciting cause of the growths is the passage of irritating discharges along the canal. He quite concurs with Dr. Roosa's opinion that these bony formations should be considered "rather as general enlargements of the periosteum or bone structure immediately beneath, than tumours, true exostosis." "These growths may remain, and do remain for long periods without attracting notice, until some slight accumulation, by completing the closure of the canal, calls attention to their existence. If this secretion can be taken away it is better that no

more severe measures be adopted, but it occasionally becomes imperative that they should be removed. For example, if behind the bony enlargement there is a perforation of the membrane, and the discharge cannot pass outwards, or if from the tympanic cavity a polypus arises, in either of these cases the life of the patient may be in jeopardy. The method of removing the growths, which are of ivory hardness, consists of drilling away the bone by means of a drill in common use amongst dentists. . . . The proceeding is often most tedious, as the bone sometimes bleeds freely, and has to be constantly dried each time the drill is applied."

The greater portion of the work is naturally devoted to diseased conditions of the tympanum itself, and is very fully dealt with. The author believes that it is certainly rare for the membrane to be primarily affected, and from his experience considers that the disease spoken of as myringitis is "much rarer than what might be supposed from the accounts that have been written of an affection to which this term is applied." As to the membrane itself he lays great stress on considering the tympanic membrane as "a protective membrane and as a ligamentous support of the ossicles," and accordingly that changes in it are of importance in proportion as these functions are interfered with.

In Lecture VII. the author treats chiefly of polypus of the ear. It is quite the exception to meet with these little tumours, unless there is a perforation of the membrane. Hence removal of the polypi alone is insufficient to effect a cure. It must be supplemented by the treatment of the perforation, and in carrying this out "observation teaches me to be more hopeful as to the results of treatment in cases of perforation when they are accompanied by polypi than when they are not." "I believe," he says, "that the chief cause of failure in the treatment of polypus in the ear may be found, firstly, in the insufficient use of caustics—insufficient, because not continued for long enough periods; secondly, in the neglect of assiduous care in cleansing the middle ear and inducing a healthy condition of its lining membrane." He discards nitrate of silver as too weak to destroy the root of the polypus; potassa fusa and nitric acid are unmanageable; he prefers chloro-acetic acid as the one which gives the best results in his hands.

The remaining chapters on fatal cases of tympanic disease, the tuning-fork in diagnosis, Menière's disease and deaf-mutism, are each worthy of careful perusal. We can heartily commend this book to all who take an interest in affections of the ear.

*The Heart and its Function.* London: Bogue. 1880. Pp. 95.

THE above is one of a series of shilling volumes on subjects connected with the preservation of health. The names of the contributors to this series are a guarantee of the ability and accuracy with which these "Health Primers" are written. In the present volume the work performed by the heart is popularly and concisely explained, and the manner in which old age and the wear and tear of life contribute to heart disease indicated. The literary style is so excellent that the cursory reader will be beguiled into a knowledge of the physiology of the circulation by the attractive way in which his interest is awakened and maintained.

*Morality. An Essay addressed to Young Men.* By MAURICE CHARLES HIME, M.A., LL.D.; Head Master of Foyle College, Londonderry. Dublin: Sullivan, Brothers. Pp. 152. 1880.

DR. HIME's essay, though rather on the borderland of religion and morals than within the domain of medicine, is, nevertheless, a direct contribution to hygiene—but from the intellectual side. The tone of the preface is constrained and apologetic—not certainly from any hesitation with regard to the facts or arguments, but from the *mauvaise honte* of one who is treading upon proscribed ground. We believe, however, that a vast amount of mischief has resulted from this misplaced reticence, as ignorance and curiosity may involuntarily lead to vice. In the first chapter the current idea that "immorality is natural" is combated. It would be out of place here to criticise the moral grounds on which the author bases his views; but from a medical standpoint we consider he might have called physiological considerations to his aid more liberally and more emphatically than he has done. That continence is compatible with high physical development is even a negative way of expressing a well-established fact. Athletes and trainers know that the most perfect condition of bodily strength and energy can only be attained by the most perfect continence. The more complete the exercise of a man's muscular powers the less room is there for harbouring influences that tend to their deterioration. The next chapter, on "Wild Oats," reverts more fully to this argument, and the extracts quoted from well-known physicians and pathologists bear ample testimony against any safety-valve theory of vice.

The "Consideration of the Woman's Case," is a strongly and

pathetically written appeal to the chivalrous feeling of men; and the "Safeguards" close the volume.

Perhaps the author considered the principle of fear too low a motive for preservation against profligacy, as we observe he has omitted, with very slight exception, all reference to the maladies which owe their prevalence, if not their origin, to general licentiousness. He has not, we think, taken into sufficient account the frightful ravages that have rendered thousands of homes miserable, that have slain myriads of victims, and that still remain potent as ever—the avengers of unchastity. Probably it is only a medical writer, with his opportunities for recognising syphilis in its chameleon forms, who can appreciate the terrible extent to which that scourge of mankind has desolated human life "unto the third or fourth generation." We regret to say we believe Dr. Hime's book to be most urgently needed. He has eloquently and conscientiously discharged what he felt to be his duty.

*On Deafness, Giddiness, and Noises in the Head.* By EDWARD WOAKES, M.D., London; Senior Surgeon, and Surgeon to the Ear Department of the Hospital for Diseases of the Throat and Chest. Second Edition. London: H. K. Lewis. Small 8vo. Pp. 224.

WE are glad to observe that this suggestive little work has so rapidly reached its second edition. Its contents will well repay an attentive perusal, although many of the conclusions still occupy very debatable ground.

The first chapters treat of ear affections in infancy, childhood, and adolescence, which Dr. Woakes considers to be due to three principal causes—1st, dentition; 2ndly, the exanthemata; 3rdly, post nasal growths.

In studying the manner in which dentition produces ear disease we come across the theory of vasomotor action, which is the key-note to all that is valuable in the book—viz., that the otalgia and otitis which occur during the progress of dentition are due to the action of the inflammation of the gum on the vasomotor nerves of the tympanum. This action is brought about as follow:—The stimulation of the afferent nerves supplying the teeth and gums results normally in a reflex dilatation of the vessels of that region, together with a simultaneous contraction of all the other blood-vessels of the body. But, under certain conditions, the reflex



dilatation is not confined to the vessels of the area stimulated, but spreads to other vessels, and by preference to those which are supplied by the same system of vasomotor nerves.

This is in general the statement of the theory, and it would be hard to speak too highly in praise of it; but when Dr. Woakes comes to apply it to particular instances he is often rather confused, and at times certainly adopts explanations too involved to be accepted so long as simpler hypotheses are obtainable.

In the case of dentition setting up otitis, the explanation given of the reflex action is that the inferior dental nerve through the otic ganglion sets up a wave of vessel dilatation in the vessels given off from the internal carotid, and consequently the tympanic branch of that artery becomes congested.

Now, the inferior dental nerve is not the branch of the inferior maxillary which is connected with the otic ganglion, but the nerve to the internal pterygoid muscle which supplies the motor root to the ganglion, the sensory or afferent root of the ganglion being derived from the auriculo-temporal, so that the very possibility of this reflex action is more than doubtful. However, this is not of much importance, as the chief blood supply of the tympanum is not derived from the internal but from the external carotid,<sup>a</sup> the same artery which distributes blood to the tissues of the jaws; so that, without going more minutely into the matter, it may be broadly stated that the same reflex action by which an inflamed tooth produces dilatation of the dental arteries will account for a simultaneous hyperæmia in the tympanum.

The remarks on the treatment of otitis media in infants are thoroughly sound, and we are glad to find especial stress laid on the early resort to paracentesis of the drum head in appropriate cases. No one who has not tried it can realise the amount of good done by this operation, the very existence of which is so often completely ignored by the physicians who are in attendance upon such cases.

Dr. Woakes devotes a chapter to the subject of post-nasal growths, which he considers to be, after dentition and the exanthemata, the most frequent source of deafness in early life, but surely he is mistaken in attributing the first description of them to

<sup>a</sup> The arteries of the tympanum are the tympanic branches of the internal maxillary, the stylo-mastoid from the posterior auricular, the petrosal from the middle meningeal, a twig of the vidian from the internal maxillary, and a branch from the ascending pharyngeal. All these are from the external carotid, and only one small branch comes from the internal carotid as it passes through the carotid canal.

Dr. Meyer, of Copenhagen, for Dr. Wagner published a paper in the *Archiv f. Ohrenheilkunde* on the subject of these granulations, in 1865, some four years before Dr. Meyer's paper was read in the Medico-Chirurgical Society.

Dr. Woakes considers these growths to be of a papillomatous nature, in opposition to the current view that they are adenomatous, basing his opinion on the microscopical examination of numerous specimens, as well as on the macroscopic appearance and clinical history of the tumours.

A good deal of space is devoted to the description of what the author terms parietic deafness, which is supposed to be due to paresis of the palate muscles and of the tensor tympani. This condition is to be distinguished from the so-called progressive deafness of Weber Liel by the contraction of the tensor tympani in the latter, and the absence of giddiness and tinnitus in the former. The two diseases together constitute, according to Dr. Woakes, seven-tenths of the cases of ear disease which develop themselves in the middle and declining periods of life! It will be very interesting to note if other aurists meet with these new diseases equally often. It is certainly a remarkable effect of mere accommodative deafness that even the watch is not heard on contact, and a surgeon should devote a very careful inquiry indeed into such a case before concluding that the only lesions present are paresis of the palate muscles and of the tensor tympani. A long series of such cases will have to be described, with careful notes of the effects of treatment, and the anatomical conditions present, before these diseases can obtain a firm foothold in our nosological tables.

Dr. Woakes' explanation of the laryngitis occasionally set up by irritation of the external meatus is somewhat far-fetched. He adopts the usual theory of "ear cough"—viz., the irritation of the auricular branch of the pneumogastric setting up reflex action in the larynx, but considers the cough incapable of producing the concomitant laryngitis, and attributes it to the vaso-dilator action of the nervi molles on the external carotid, this being set agoing by the stimulus passing from the pneumogastric to the first cervical ganglion of the sympathetic. When a *vera causa* in the shape of the cough is present, it is hardly necessary to have recourse to such very arbitrary hypotheses.

The explanation of the harshness of the voice observed as the precursor of laryngeal catarrh, as also of the breaking of the voice

at puberty, is very ingenious, and deserves more than a passing mention. Dr. Woakes assumes that the wave of vessel dilatation which proceeds to the larynx in both these conditions is first appreciated in the vasa nervorum, owing to the fact that the containing sheath of the nerves allows no room for the accommodation of the increased blood-supply, and consequently the pressure on the nerve-fibres produces derangement of their functions—hence the paresis of the glottis observed in these cases.

\* Ear-sneezing also is accounted for by an impression on the auricular branch of the pneumogastric “travelling along the vagus to its pulmonary branches,” producing there a sensation of want of breath, which (as in a case recorded in the book), not being relieved by yawning, terminates in sneezing. It is very improbable that this theory will be adopted by physiologists in preference to the simpler explanation which accounts for the sneezing by the irritation of the auriculo-temporal of the fifth producing the reflex result commonly elicited by the stimulation of the nasal nerve. Indeed, even if this explanation was not known, it is difficult to conceive how an impression travelling down the vagus to its pulmonary terminations, as Dr. Woakes supposes, could, by any conceivable mechanism, terminate in a sneeze!

Some 80 pages are devoted to the subject of giddiness, which the author accounts for by high intra-labyrinthine tension, produced either by spasm of the tensor tympani, &c., or dilatation of the labyrinthine arteries from some derangement in the inferior cervical ganglion which supplies the vasomotor nerves to the labyrinth as well as to the other districts nourished by the vertebral arteries.

It is, of course, pure hypothesis that increase of labyrinthine tension can produce the sensation of giddiness. Nothing certain is known on the subject, but the profession are none the less indebted to Dr. Woakes for the able manner in which he has shown that lesions of the stomach or injuries to the brachial plexus may naturally be expected to produce some effect upon the labyrinthine circulation by means of the connexion established between these areas through the inferior cervical ganglion.

The description of tinnitus is interesting, and may prove important in course of time when the subject is more worked up, but at present it cannot be held that the author has shown at all conclusively that the various forms of tinnitus depend on the causes

he has assigned to them respectively. A long series of very carefully noted cases detailing the effects of treatment, and, when possible, the appearances after death, will be necessary before this classification can be established. There is one very rash statement occurring in this chapter, that "for a sound to be heard a sound must exist." Does Dr. Woakes really hold that the auditory nerve is not susceptible to thermal, mechanical, and electrical stimuli like other nerves?

We must not omit to call attention to the valuable remarks on the treatment of cases of giddiness and tinnitus. They should be read by all practitioners who take any interest in the subject of aural therapeutics.

Perhaps Dr. Woakes takes somewhat too hopeful a view of his therapeutical resources, or perhaps other surgeons have not adopted the treatment in suitable cases, but be that as it may, there does not seem to be so universal a belief in the efficacy of hydrobromic acid as we should expect to find if it could effect all that he gives it credit for. We have, for our part, seen it prescribed in numerous cases of tinnitus of all sorts and kinds, and have never yet been able to attribute any appreciable good result to its action.

#### ESMARCH'S BANDAGE IN ANEURISM.

At a recent meeting of the Société de Chirurgie, M. Verneuil took occasion to point out the grave and fatal results that may attend the use of Esmarch's bandage in the treatment of aneurism. He detailed a case that had just occurred in the practice of an American surgeon, where a popliteal aneurism was treated by two applications of the bandage, one lasting  $4\frac{1}{2}$  hours, the other  $7\frac{1}{3}$  hours. The next day gangrene of the great toes and rapid death supervened. At the autopsy the heart and aorta were found to be fatty and atheromatous. He believes that the sudden increase of pressure from the confinement of at least an extra pint of blood in the trunk and unbandaged limbs may determine fatal injury to degenerated heart arteries or viscera. This is easily understood when it is remembered that the injection of much less blood into the veins by transfusion has in more than one case produced temporary hæmaturia. While not wishing to proscribe its use altogether, he thinks the Esmarch should not be employed where heart disease is suspected. M. Sée believes it should never be applied during a longer time than half an hour, or an hour at the most.—*L'Union Médicale.*

S. W.



## PART III.

### HALF-YEARLY REPORTS.

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#### REPORT ON SURGERY.

By WILLIAM THOMSON, A.B., F.R.C.S.I.; Surgeon to the Richmond Hospital; Member of the Surgical Court of Examiners, Royal College of Surgeons; Examiner in Surgery, Queen's University, Ireland.

#### RUPTURE OF THE AXILLARY ARTERY IN A CASE OF DISLOCATION OF THE HUMERUS.

THIS unfortunate, though rare, accident occurred to a patient under the care of Mr. Bellamy, of Charing Cross Hospital, London, and is reported in *The Lancet* (Aug. 14, 1880). The man was aged fifty-five, and had dislocated the humerus on the 16th December, 1879. In January he went to a London Hospital, where an unsuccessful attempt at reduction was made. On the 2nd February a further attempt was made by one of the surgeons, and the patient immediately became aware of a swelling in his armpit. A fortnight afterwards he was discharged. Three weeks later a little bright blood oozed through the skin, and on July 30 he had a hæmorrhage amounting to a quarter of a pint. When admitted under Mr. Bellamy's care, a large tumour, with tense, pulsating walls, occupied the region of the right shoulder. At the lower part in the axilla, the skin was dark and sloughy. The tumour—which was about the size of a man's head—was not distinctly circumscribed at the lower part. Amputation was decided upon. The subclavian was well controlled, but the hæmorrhage from the sac, and the enlarged vessels behind and below, was terrific. Some pounds of clot and organised lymph were removed. The main trunk was not recognisable. There was a hard cartilaginous-like tube on the wall of the thorax, throwing a fearful jet of blood, and this was secured with great difficulty. The patient, however, never rallied from the operation, and died in an hour.

In Power's "Anatomy of the Arteries" a case is related which came under the care of the late Mr. Robert Adams. The artery was ruptured at the time of the dislocation. The bone was restored to its place, and ten days subsequently the subclavian was successfully tied.

#### SUTURE OF THE RADIAL NERVE.

Von Langenbeck (*Berliner klinische Wochenschrift*, No. 8, 1880) relates a case of successful suture of the radial nerve after injury. The man, aged thirty-one, had been injured by a falling ceiling, his right arm being badly bruised. An abscess formed, and as a result there was a scar corresponding to the spot at which the radial nerve, after taking its course in an outward direction round the forearm, comes to the surface between the triceps and brachialis anticus muscles. There was complete paralysis of the extensors of the hand and fingers. The hand was pronated and hung loosely down, the fingers were flexed, and the thumb could not be abducted. The constant and induced currents did not affect the corresponding muscles. There was anæsthesia on the back of the hand and some œdema. Division of the radial nerve being diagnosed, an incision six centimetres long was made through the scar, and the divided ends of the nerve were found embedded in some cicatricial tissue, about two centimetres apart, and without bulbous swelling. They were cleanly dissected, a portion was snipped off each with a scissors, and a catgut suture was passed through them, about a millimetre from the extremities. There was great tension, but the arm and forearm were put up in an obtuse-angled splint, and in seven days the wound, which had been treated antiseptically, was healed. Five days later there was distinct contraction of the extensors of the hand and fingers under the induced current, and there was slight power of voluntary movement. In a month later the patient could extend his fingers completely and raise his hand to a level with the forearm.

Success in a similar case had previously been attained by Esmarch, who sutured the nerve, sixteen months after injury, with almost perfect restoration of the function and sensibility. In Langenbeck's case the back of the hand remained anæsthetic.

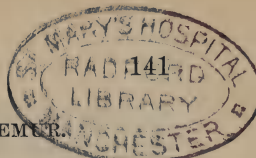
#### STRETCHING OF THE FACIAL NERVE.

At a meeting of the Clinical Society of London, Dr. A. Sturge and Mr. Godlee submitted a joint paper relating their treatment

of a case in which there was spasm of the facial muscles. The lady was seventy-two years of age, and had for some years been subject to fits of depression, followed by twitching round the right eye, extending subsequently to all the muscles supplied by the right facial nerve. Other remedies having failed, Mr. Godlee made an incision behind the ear, from the external meatus to the angle of the jaw. The sterno-mastoid and the parotid gland were pulled in opposite directions, exposing the upper border of the digastric, close to which the nerve was found as it emerged from the stylo-mastoid foramen. The nerve was raised on a hook, and pulled with moderate force. After a few pulls the right side of the face was completely paralysed. The wound healed without suppuration. The face remained paralysed for two months, and for some days after the operation there was some pain, which returned at intervals. Seen three months afterwards there was still a good deal of deficiency of movement of the muscles of the right side. The operation has been done five times—by Baum, Schüssler, and Eulenberg, in Germany; by Putnam, in America; and by Godlee, in England. In all these cases there was temporary paralysis after the operation, varying from two weeks in Baum's case to five months in Eulenberg's. It is remarkable that in every case in which the facial nerve has been stretched for spasmodic tic the operation has been successful, whilst in several cases of spasmodic affection of other parts—as of the arm, &c.—stretching the nerves of the part produced no good effect. In these latter cases the spasm had usually been of an elaborate character, allied rather to chorea, whereas the former is a simple incoordinated spasm of all the muscles supplied by a single nerve.

#### STRETCHING AND DIVISION OF THE INFERIOR DIVISION OF THE FIFTH NERVE.

Credé, of Dresden, has performed the operation of stretching and dividing the inferior division of the fifth nerve for neuralgia, with complete success (*Med. Chir. Centralblatt*, No. 31). An incision was made down to the posterior surface of the upper jaw, and the lower jaw was dislocated. He then penetrated beneath the periosteum, as far as the foramen ovale, seized the nerve with a blunt hook, and isolated the middle meningeal artery. The nerve was stretched, and then divided at the base of the skull, and the neuralgia was cured.



THE DIAGNOSIS OF FRACTURE OF THE FEMUR.

Lagorio, of Chiavari, Italy, writing in the *Chicago Examiner* (*Med. Rec.*, Nov., 1880), refers to a pathognomonic sign little known in fracture of the femur. It is a traditional practice in his hospital to explore, whenever the fracture is suspected, the small space that is found between the trochanter and the crest of the ilium:—"In placing the two extremities in the same position, instead of the considerable resistance given in the sound limb by the tension of the extensor muscle, of the fascia lata, and of the gluteus medius, a deep hollow is found in the affected limb, due certainly to the diminished tension of the above-named muscles by the approximation of their points of attachment."

HYDROPHOBIA.

A discussion has recently taken place at the Académie de Médecine, Paris, upon the subject of hydrophobia (*Med. Times*, Dec. 11, 1880, and *Bulletin*, Nov. 9, 1880). The debate arose upon an extraordinary case reported by Professor Léon Colin, the patient having died of supposed hydrophobia after an incubation period of four years and ten months. He had been bitten while endeavouring to rescue a soldier comrade from the bite of a mad dog. The wound was well cauterised with a hot iron, and no immediate trouble followed, but the comrade died in forty-eight hours. Four years and ten months later, Colin's patient was attacked with illness, was admitted to hospital, and died some hours after with all the symptoms of hydrophobia. In the course of the discussion Professor Bouley asked did this man die of hydrophobia, and did it proceed from a bite inflicted nearly five years ago? It was true that all the symptoms were present, but it is a fact that both in man and the dog cases may occur in which identical symptoms may appear without being due to a bite. How, then, are these to be distinguished? Professor Vocard, of Alfort, in 1878 announced that in all his autopsies of dogs, as well as in those of a goat or a horse dying of rabies, there had been found on the floor of the fourth ventricle an accumulation of a considerable number of leucocytes in the perivascular lymphatic sheaths, these in some parts constituting true apoplectic centres. The constancy of this lesion in cases of true hydrophobia may be contrasted with its absence in two dogs in which all the symptoms of hydrophobia were induced by the presence of foreign bodies causing obstruction in the intes-



tinal canal. Now, as these lesions are not mentioned in Colin's case, an important proof is wanting, as is also the proof of inoculation of some other animal. Supposing hydrophobia to be the real disease, there was no proof of a direct relation between the bite and the attack, and the man might meanwhile have been licked by some rabid animal. M. Maurice Raynaud denied that the condition of the fourth ventricle just described was pathognomonic—it had been found in other diseases. Colin adhered to his belief, based upon the thorough investigation of the case made by him.

#### NEPHRECTOMY.

Mr. Couper reports a successful case of removal of the kidney in a girl aged seventeen (*Med. Times and Gazette*, Nov. 20, 1880). The patient first complained of pain in the right loin in 1879. She lost flesh, became weak, and the urine was always turbid. Micturition was never more frequent than in health, and there was no pain over the bladder. In November of that year she was in hospital for a few weeks. In April, 1880, a tumour was found in the right loin. An examination showed there was a more or less solid mass occupying the right iliac and lumbar regions. There was slight visible fulness to the right of and below the umbilicus, but no marked swelling. The liver dulness commenced at the lower border of the sixth rib in front, and extended nearly to the crest of the ilium. The urine contained one-third its volume of pus. By examination under ether it was found that the ascending colon lay in front of the tumour, that deep-seated fluctuation was present in the latter, that its inner edge reached the middle line, its lower edge to one inch above Poupart's ligament, and its upper edge three-quarters of an inch below the margin of the ribs. The tumour did not extend into the pelvis, was movable, and could be tilted from hand to hand. There were no symptoms of cystitis; the urine was acid; and the uterus and vagina were healthy. It was agreed that the tumour was a suppurating kidney, and it was resolved to cut into it from the loin. As regards the prospect of successful nephrectomy, evidence as to the condition of the other kidney was of vital importance; and Dr. Barlow pointed out—1st, that there had been no vomiting, so often a distressing symptom where both kidneys are diseased; 2ndly, that the urine was normal both as to quantity and the percentage of solids contained in it—thus proving that there was no renal insufficiency; 3rdly, that the amount of albumen present was very small; and lastly,

that the size of the tumour was incompatible with the existence of any trace of normal secreting structure. The incision was horizontal, and precisely in the position selected in lumbar colotomy. Exit was given to a large quantity of foul pus. An exploration was made with the finger, and as it was believed that the closure of the great sac by granulation would be tedious, it was agreed to remove what remained of the gland. In stripping off the peritoneum a hole was made in the membrane, and some pus escaped into the cavity of it. The ureter was tied with gut; the large vessels with carbolised silk. The operation lasted two hours and a quarter. The girl left bed on the thirty-sixth day, and was discharged in about three months, rosy and in good health.

Another case is reported by Lange (*American Journal of Medical Science*, Oct., 1880). The patient was a Hungarian lady, aged forty-seven, who complained of severe attacks of pain, and of the presence of a large, slightly movable tumour of the right kidney. There was a copious deposit of pus in the urine, and renal epithelia, and the disease was diagnosed as pyonephrosis. Six months after she was first seen she became very feverish; had severe, persistent pain; and the urine became clear. It was therefore concluded that the ureter was obstructed, and that the urine came from the other kidney; and as the urine did not present any considerable degree of abnormality, it was believed that the left kidney was healthy. The attack of pain ended when the urine became again loaded with pus, showing that the obstruction had been overcome. An exploration was begun either with a view to the removal of the organ or the establishment of a fistula. The kidney was found to be in a state of cystic degeneration, and it was determined to remove it. The pedicle was tied in four portions by double ligatures, drainage tubes were introduced, and the wound was dressed antiseptically. Vomiting followed, and the patient died 84 hours after the operation. It was then found that the removal of the kidney had deprived her of her only means of existence. The left kidney was found to consist of several cystic cavities, two of which contained a fluid like urine; one of about the size of a hen's egg was filled with cheesy matter. There was no trace of tissue of the kidney left. The pelvis of the kidney and the ureter were entirely obliterated.

#### NEPHRO-LITHOTOMY.

Mr. Henry Morris has brought before the Clinical Society of London a case of removal of a stone from the kidney by direct

incision. By the term is meant removal, through a lumbar incision, of a renal calculus from a kidney in which the pelvis is not dilated, and which, but for the presence of the stone, is presumably healthy. The opinions of writers on the subject has been adverse to the attempt to remove a stone from the kidney unless it could be reached through a distended pelvis, the chief reason urged being the danger of fatal hæmorrhage if the existing substance of the organ were cut or torn. The patient was a girl aged nineteen. For eight years she had pain in the right side, with sickness and occasional vomiting. In September, 1878, the symptoms became more pronounced; the urine was dark-coloured, and she was obliged to go to hospital. She went out relieved, but returned in December, 1879. There was severe pain in the groin and loin, and the urine was acid, and dark as porter. There was no swelling in the loin. In February the kidney was exposed by an oblique lumbar incision. The right index finger was passed over the posterior surface of the kidney, and at once detected something faintly projecting over the renal substance, near the hilum. The kidney was incised at this spot, and a mulberry calculus of triangular shape, and weighing 31 grains, was extracted by means of a scooping movement of the finger-tip. There was no hæmorrhage. The upper end of the ureter was not dilated in the least, and as the stone could not be felt there it was not interfered with. The wound was brought together by three sutures, and a drainage-tube was introduced between two of them. The urine ceased to flow through the wound on May 4, and the patient rapidly recovered. Nothing remained but a sinus an inch and three-quarters long, from which about a drachm of pus escaped daily. This is the first successful case of this kind, although the operation has been attempted about six times.

Mr. Golding Bird (*Brit. Med. Journal*, Dec. 11, 1880) also relates a case. The patient was a man aged twenty-one. He complained of pain in the left lumbar region, with frequency of micturition and hæmaturia. These symptoms continued for two years; then there was a cessation for a month, after which blood, mucus, and gravel again appeared. Several pieces of calculus were passed *per urethram*. He continued to have varying symptoms until April, 1879, when a swelling appeared in the left loin, and later on became large and elongated; larger below than above; very tense, not painful, and not fluctuating. The tumour gradually increased, and became painful. There were severe pains about the

pelvis, the lower part of the abdomen, the left testicle, and the penis; and when the prostate was touched in a rectal examination, there was extreme pain, which extended up to the left loin. In September all the pains increased, though the lumbar swelling diminished; and the bladder became very irritable. It was believed that there was a calculus in the kidney, and a lumbar incision was made over the gland, but no stone was discovered, and the wound was closed. The patient was relieved from pain for a fortnight, but it then returned with its usual severity. There was no swelling in the loin at the time of the operation, and it did not appear again. He subsequently came under Mr. Durham's care and was sounded for stone, but none was found; but, as pain and frequency of micturition remained, Mr. Durham performed perinæal section, tying a No. 12 catheter in the bladder, through the perinæum. There was a gradual improvement in his symptoms, and he was discharged in March, 1880, free of pain. Mr. Bird points out that his operation was undertaken as much for the purpose of diagnosis as with the prospect of giving relief to symptoms and curing the patient; and while it failed in the latter object it set at rest the long-debated point whether the patient was suffering from disease of the bladder or from renal calculus.

#### FRACTURE OF THE HEAD OF THE RADIUS.

Bruns, of Tübingen, calls attention to this injury in the *Centralblatt für Chirurgie* (*Med. Rec.*, August, 1880). He has collected twenty cases, exclusive of one which came under his own notice, but these by no means exhaust the number, which he believes to be considerable, although the injury is not often recognised. The joint is involved, and the fracture takes a vertical or oblique direction from the superior surface of the bone, detaching a portion of the head. The lesion is quite distinct from transverse or oblique fracture of the neck of the radius, by which the head *in toto* is separated from the diaphysis. Of the former lesion there are two forms—complete and incomplete. In the incomplete form the fracture commences at the discoid articular surface—in some cases nearer the periphery, in others nearer the centre, passes down the neck, and ends at a blind extremity, so that the fragment still remains attached by a bridge of bone. The broken surfaces still sometimes remain in close contact—sometimes widely diverge. This form may be fissured, the head having been broken into a number of fragments, each of which remains attached at its base.



In complete fracture a larger or smaller fragment is wholly detached in most instances from the anterior portion of the head—rarely from the lateral or posterior portions. In this form the head is rarely broken up into several portions. If the fracture be limited to the head of the bone, it is purely intra-articular; the fragment lies almost free in the joints, being attached only by a portion of ligament. If the fracture involve both the neck and the head, it is partly intra-articular, partly extra-articular, and free mobility and displacement are prevented by the annular ligament.

The fracture is usually complicated, the most frequent lesion being fracture of the coronoid. The most frequent causes are falls on the flexed elbow, or on the extended hand, or direct injury. Bruns has produced the fracture experimentally. On striking with much force the head of the humerus in a removed limb, the forearm being distended and the palm of the hand applied to the ground, he has twice produced a fissured fracture of the head of the radius, and once a fracture with detachment of its anterior portion. Von Lesser and Urlichs have effected a like result with the forearm of the detached extremity flexed at a right angle.

#### THE TREATMENT OF SPINAL CURVATURE AND ABSCESS BY INFLATION.

This is the title of a paper by Mr. J. H. Webb, of East Melbourne, reprinted from the *Australian Medical Journal*. He adopts the principle of suspension from the neck only, and in advanced cases uses Sayre's bandage, applied when the patient is horizontal. The special point of interest in his paper, however, is with reference to the treatment of abscesses. He observes that there is great difficulty in injecting a long sinus with any fluid, and this is the very lesion to require antiseptics. It occurred to him that he might attain his purpose by means of devitalised air, or air passed through warm carbolic acid and forced along the fistulous track. Two things must happen—the air charged with carbolic acid would carry a germicide into every interstice, into every cranny, to every granulation, and the devitalised current would take the place of the vitiated atmosphere already in the sinus. Should he succeed in rendering the sinus permanently sweet, the contraction of the tissue in the neighbourhood of the track would, he trusted, prevent the accumulation of matter, and so do away with the necessity of artificial drainage.

“Before trying an experiment on the human subject I thought it best to see how inflation would act on a dog; the warm air might cauterise, or it might give rise to the toxic symptoms of carbolic poisoning. Accordingly I enticed a stray dog into my yard, and having firmly secured him, I thrust the point of the tube of my inflater under the skin and blew up the intercellular tissue, so that air passed in under the scalp, under the skin of the nates and that of the abdomen. After this the dog escaped, and I did not see him again for three days, when I found there was a certain amount of emphysematous crepitation left, especially over the buttocks, but not the slightest sign of sloughing, and for ought I could see to the contrary, the creature was as lively as if nothing had ever happened to him.

“With a diagram before me of Pasteur’s arrangement for introducing calcined air into a flask, it was easy enough to sketch out an apparatus that would suffice for my purpose. Following this experimenter, I endeavoured at first to devitalise air by forcing a current through a porcelain tube, heated by one of Fletcher’s burners, and thence into a flask containing carbolic acid. I shortly recognised that the first part of this proceeding was unnecessary, that it was sufficient to simply drive air into a vessel through a heated germicide, and thence along the sinus or track that required inflating. Accordingly, I selected an ordinary Florence flask, half filled it with crystalline carbolic acid, and tightly fitted into its neck a cork pierced for two glass tubes bent at right angles. One of these tubes was just sufficiently long to allow it to enter the flask, whilst the other passed to the bottom of the vessel, and thus through the acid. To the longer tube I attached the india-rubber contrivance belonging to Richardson’s ether freezing spray instrument; the flask was then placed on a holder, so high that its contents could easily be warmed by a spirit lamp burning beneath it, and my inflater was complete.”

The method has succeeded in a number of cases, and the author recommends it strongly as being superior to other plans in most cases.

#### THE RADICAL CURE OF HERNIA.

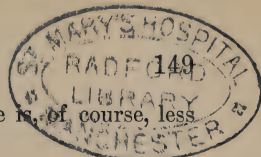
Mr. Dunnett Spanton proposes a new plan of operating for radical cure of hernia. He has carried it out in several cases with complete success. The method is thus described (*Brit. Med. Jour.*, Dec. 11, 1880):—

“The instruments required are very simple—a thin strong knife, like a tenotomy knife, for separating the skin from the subjacent tissues; and the screw instrument shaped like a corkscrew, with a flat point and movable handle, nickel-plated. The screw is made rather broader near the point, tapering somewhat towards the handle, and should be suffi-

ciently strong not to break, but yet as thin as may be consistent with strength.

“The mode of performing the operation in a case of ordinary oblique inguinal hernia is as follows:—The patient must be in good health, have an aperient the day before, and an enema on the morning of operation. If necessary, the pubes must be shaved. Under the influence of an anæsthetic, the hernia is carefully reduced, and not allowed to come down during the operation. An incision is made in the skin of the scrotum large enough to admit the forefinger easily, over the fundus of the hernial sac, generally about two inches below the spine of the os pubis; and the skin is separated from the parts beneath by means of the blade or handle of a narrow scalpel, to an extent determined by the size of the hernia, and that of the inguinal canal. The operator standing on the left-hand side of the patient, the forefinger of the left hand is passed up to the internal abdominal ring, invaginating the fascia and hernial sac to the same extent. A careful examination is now made of the surrounding structures, the position of the vessels clearly made out, the size and shape of the abdominal rings noted, as well as the length of the canal. This is necessary, in order to have an instrument of the proper size. The left forefinger being retained in the hernial canal, protecting the spermatic cord, and at the same time closing the internal ring, the screw instrument, previously dipped in carbolic oil, is, with the right hand, thrust through the skin of the groin so as to transfix the aponeurosis of the external oblique muscle, at a point somewhat above that at which it is intended to pass through the conjoined tendon. Having given the instrument one half-turn to the right, if a right inguinal, and a whole turn if it be a left hernia, it is next made to pierce subcutaneously the conjoined tendon of the internal oblique and transversalis muscles as high up as can safely be reached, the left forefinger carefully guarding the point, so as to avoid wounding the vessels or peritoneum. This part of the operation must be executed cautiously and deliberately. It will be then found that, as soon as a hold has been secured by the instruments the internal ring is practically closed. Another turn is now given to the screw, causing it to pass through the invaginated tissue—whether consisting of fascia or sac, or both—and it is again passed through the external pillar, and then across to the internal pillar of the external ring, and another turn given if possible, so as to bring the point out at the wound in the scrotum. The handle should then lie flatwise on the abdomen, and the point of the instrument be protected by a round piece of solid india-rubber, or by winding round it some carbolised gauze. A light pad is then placed over the part, and a bandage carefully applied.

“The operation may be performed under Lister’s antiseptic method, as in two of the cases (IV. and VII.) I have to record; but it is well then to leave the instrument *in situ* rather longer. The results are equally



satisfactory if this precaution be observed, and there is, of course, less danger from any septic influence.

"The subsequent treatment is very simple. After a period varying from a week to a fortnight, a certain amount of inflammatory action will be observed along the line of the inguinal canal where the instrument lies, and more or less discharge takes place from the wounds. The amount of induration excited will be the guide as to the time for removal of the instrument, but a week has been usually found sufficient. The removal of the instrument is easily effected, as the suppuration which takes place along its course serves to loosen it somewhat; and by keeping it well oiled from day to day, it is easily withdrawn. The wounds will readily heal under any simple dressing, with pad and bandage. A truss may be worn for a time, as the adhesions will of necessity not be very firm at first; but, in most of the cases I have operated on, this has been dispensed with without any ill results.

"The aim of the operation is to bring together the pillars of the hernial canal, and at the same time to plug the opening in such a manner as to shut it off from the peritoneal cavity on the one hand, and, on the other, to form an impassable barrier against any further descent of the bowel. So long as the general peritoneal cavity is not interfered with, so far is danger averted; and, if the hernial canal be effectually closed throughout, so to the like extent is the cure complete.

"The operation is simplicity itself to anyone accustomed to operative surgery; and, with regard to the danger attending it, I can only say that it has now been performed by myself and my colleagues in thirteen cases, in not one of which has any serious symptom been observed, the highest temperature recorded being  $101.2^{\circ}$  Fahr.; and, in eleven of the cases, the cure has been complete; in the remaining two, the patients have been greatly benefited. I think, therefore, I am justified in saying that it is a simple, a safe, and a very efficient method of curing suitable cases of hernia."

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#### INFLUENCE OF ALCOHOL ON THE PERSPIRATORY FUNCTION OF THE SKIN.

DR. S. WASSILIEFF found that, after the skin had been thoroughly rubbed with alcohol, hot baths induced much more profuse perspiration, exceeding sometimes four and five times the amount of water lost without previous treatment with alcohol. Hence, the two processes should always be combined when there is indication for extraction of a considerable quantity of water through the skin. Dr. Wassilieff explains the action of alcohol by an irritation of the sensitive, and, perhaps, also of the secretory nerves of the skin, and also by the removal of fat from the surface of the skin and the glandular pores.—*Vratch*, 1880, No. 13, and *N. Y. Med. Record*, Nov. 13.



## REPORT ON ANÆSTHETICS.

### PART I.

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WE propose in this Report to review the recent progress made in the science of anæsthetics, but more especially two works that have lately appeared on the use of these agents—namely, the “*Traité D’Anesthésie Chirurgicale*” by Dr. J. B. Rottenstein, of Paris, and the “*Anæsthetic Manual*” of Dr. Turnbull, of Philadelphia. The former exhaustive treatise of four hundred pages appeared early in 1880, and includes a description of the method of Professor Paul Bert of the administration of nitrous oxide gas. We have in these works thoroughly represented the state of professional feeling in France, Germany, and America, both as to the practical use of the various agents employed, and also a careful summary of the scientific experiments and statistical record of results which have mainly contributed to educate the professional mind in these countries. It is perhaps true, as Dr. Rottenstein remarks in his opening chapter, that no greater scientific conquest has been achieved in this age, if we except that of the illustrious Jenner, than the production of artificial anæsthesia. So far as the art of surgery is concerned we may now add to these two that of the introduction of antiseptics and the surgical revolution associated with the name of Lister. Dr. Rottenstein in the first two chapters of his work on the history and progress of anæsthetics traces critically and carefully, though withal impartially, the origin of the discovery of nitrous oxide gas, of ether and chloroform. He shows how the ancient attempts to relieve pain consisted of the use of stupefying agents, whether of the nature of a toxic gas or an intoxicating drink. The ma-yo of the Chinese and the mandragora, recently experimented on by Dr. B. W. Richardson, the narcotics of Theodoric, the bhang (Indian hemp) of the Mohammedans—they had all similar effects. Beddoes when he availed of the inhalation of ether vapour (1795) in the treatment of phthisis, and Davy when he conceived the idea (1799) that, owing to its property of destroying pain, nitrous oxide gas might probably be employed

with advantage in surgical operations accompanied with hæmorrhage, were the first observers who thought of the medicinal application of these vapours. The experiments of Davy on himself when attached to Beddoes' institution, in which he experienced the exhilarating effects of the nitrous oxide, both in a mixed state and pure, and which he accurately detailed all the results of, though followed up by Berzelius, Vauquelin, Thenard, Orfila, and others, nevertheless did not lead to the recognition of the anæsthetic action of the gas. "The gas," as Dr. Rottenstein remarks, "was an object of amusement and curiosity until the year 1844, when Wells made the remarkable discovery which immortalised him." Dr. Rottenstein discusses fully and impartially the claims relatively of Horace Wells, Drs. Morton and Jackson, as discoverers of the anæsthetic properties both of nitrous oxide gas and ether during surgical operations.

Briefly we may thus summarise this most interesting history:—Horace Wells, the dentist, of Hartford, in the year 1844, then in his twenty-first year, attended the chemical lectures of Dr. Colton, at which he witnessed the administration of the gas to a Mr. Cooley, who, when under its influence, bruised and hurt himself. Wells on Mr. Cooley's recovery inquired if he felt the injuries, and if they gave him at the time any pain, and on receiving a response in the negative, immediately expressed his conviction that under the gas a tooth might be extracted without pain. The following day, December 11th, 1844, Colton administered the gas to Horace Wells, and a tooth was extracted under its influence. Wells, on regaining consciousness, exclaimed, "A new era in the extraction of teeth! it gave me no more pain than the prick of a pin." The same year Wells made known his discovery to Drs. Warren, Hayward, Jackson, and Morton, and at Boston he operated in the presence of several medical men. Morton had been a pupil of Wells at Hartford. He went to Boston, and here the interviews occurred which enabled the former to finally usurp the place rightly occupied by Wells. Faraday, in 1818, had drawn attention to the analogous qualities of nitrous oxide gas and sulphuric ether, and these were well known. Wells directed Morton to get the gas from a chemist named Jackson. This latter suggested the substitution of ether for the nitrous oxide as safer, and with the latter anæsthetic Morton, on the 30th September, 1846, extracted a tooth from a patient, Eben Frost. In 1849 another American surgeon, Crawford Long, published his results with ether, and

Dr. Marion Sims has claimed for him a share in the honour of the discovery; others have claimed such honours for Dr. Parmly, a Parisian dentist who practised in Paris in 1840.

But, as Dr. Rottenstein justly remarks, these claims do not stand the test that "publicity is a touchstone of invention." Wells' discovery was published to the world several years before those of either of the others were heard of. The desire for gain quickly supplanted the scientific interest in the discovery, and with it came quarrels between Jackson and Morton as to the claim to priority in obtaining certain patents for the discovery of the anæsthetic ether. Wells was forgotten. But meanwhile Wells was extending his experience of nitrous oxide gas, and in September, 1847, he administered it at Westford during the removal of a testicle, and in January, 1848, for the amputation of a thigh; and in the same month, only twenty days before his death, he again gave the gas for the removal of a tumour from Mary Gabriel, of Bristol (Connecticut). Poor Wells!—his tragic end is thus described by Dr. Rottenstein:—"Rendu fou par l'échec de son mémoire et l'insuccès de toutes des protestations, il donna des signes manifestes d'aliénation mentale. Il fut arrêté et emprisonné; puis ne pouvant supporter plus longtemps la vie, il s'ouvrit les veines aux quatre membres et respira de l'éther sulfurique jusqu'à ce qu'il tombât privé de connaissance." This occurred on the 24th of January, 1848. During the absence of Wells in Europe, in 1846, Morton had commenced to use ether. Brewster had, as Dr. Rottenstein remarks, called attention to the fact that for some time the anæsthetic properties of ether were availed of as a source of amusement, and its effects produced in laboratories and schools by the pupils. Morton, apparently thinking to act on the imagination of a patient, interviewed Jackson in his laboratory, and explained to him his idea of thus extracting a tooth, giving the patient simply atmospheric air. Jackson ridiculed the idea, and spoke of ether, appealing to the pupils present, who readily testified to its properties in producing insensibility. That day Morton operated, giving the ether on a handkerchief. Dr. Rottenstein argues that this interview was merely a feint on the part of Morton to sound Jackson, the former having been a pupil of Wells years before, and perfectly acquainted, as he doubtless was, with all anæsthetic methods. Be this how it may, the first public demonstration of the use of ether was given in the General Hospital of Massachusetts on the 17th of October, 1847, and the

day following Warren practised a resection of the lower jaw under ether successfully, and without any pain to the patient. In February of the same year Malgaigne used ether at the Hospital Saint Antoine, but it was an English dentist, Robinson, "who first employed ether in Europe in the art of surgical anæsthesia." On February 1st, 1847, at the Institute of France, Velpeau expressed himself thus:—"Le fait est un des plus importants qui se soient vus; un fait dont il n'est déjà plus possible de calculer la portée, qui est de nature à remuer, à impressionner profondément non seulement la chirurgie, mais encore la physiologie, voire même la psychologie." In March of the same year Flourens detailed his researches with chloroform before the Academy of Sciences. It was not until November of the same year that Sir James Simpson, while prosecuting his experiments on anæsthetic substances, inhaled, with Drs. Keith and Matthews Duncan, chloroform vapour, and realised its effects in his own person, and also witnessed them on his friends. But previously to this it appears from the researches of Sir Robert Christison, which are supported by the testimony of Mr. Holmes Coote and Sir James Paget, both at the time at St. Bartholomew's Hospital, the former as assistant to Mr. Lawrence, the latter as a student, that Michael Cudmore Furnell, then a student in the hospital, had discovered the anæsthetic property of chloroform, recognised its milder effects, and urged Lawrence to try it in an operation in which the unpleasantness of ether was inconveniently felt. Dr. Furnell himself explains how, as a pupil of John Bell in 1847, he was tempted to experimentalise on himself with ether; but Bell prohibiting the use of ether for this purpose, he accidentally came on a bottle of chloroform and inhaled some of the vapour. A few days later he spoke of his discovery at St. Bartholomew's. This was five months before Simpson's discovery in Edinburgh. Thus we arrive at the origin of the three greatest anæsthetic agents which have hitherto been employed.<sup>a</sup>

<sup>a</sup> At p. 287 of Dr. Rottenstein's work, in referring to the history of "Local Anæsthesia," he draws attention to a manuscript of the celebrated Marbourg professor, Denis Papin, whose name is associated with the discovery of the steam-engine, dated 1681—"Traité des opérations sans douleur." In this, Papin, who at first practised physic, appears to have grasped the idea, if not of general, at least of local anæsthesia. The MS. is in the possession of the Grand Duke of Hesse. Dr. Sexton (*Gazette hebdomadaire*, No. 36, 1879) shows how Dr. Wright, of London, Aurist to Queen Charlotte (1829), published his discovery of the effect of inhaling ether in the examination of, and in painful affections of, the ear.



In the year 1840 bichloride of methylene was discovered, but, as in the case of other anæsthetics, its practical application was not thought of until the year 1867, when Dr. B. W. Richardson introduced it for the purpose of general anæsthesia. Of this anæsthetic, since the year 1868, when we commenced to employ it in eye operations, we have had considerable experience, and its value in ovariotomy has been established by Mr. Spencer Wells. We shall again refer to it in contrasting its action with chloroform and ether.

Dr. Rottenstein publishes a letter from Dr. Colton, the founder of the Colton Dental Association at New York, in which he corroborates all the facts advanced by Dr. Rottenstein which bear on the discovery of the application of anæsthetics by Horace Wells. The Colton Institution was founded in July, 1863. From February, 1864, to the present date (1880), 97,423 individuals have been anæsthetised in this institution. "They have not had a single death, nor even a result so unpleasant as to necessitate the sending of a cab for a patient. Some patients (1 in 150) were nauseated, due to the regurgitation of some blood." Similar institutions have been established in Boston, Philadelphia, Baltimore, Cincinnati, St. Louis. Over 60,000 have been anæsthetised at the Philadelphia establishment, and altogether Dr. Colton says that, without exaggeration, he can affirm that over 300,000 individual patients have been anæsthetised without a single accident. The immunity thus enjoyed in the administration of nitrous oxide gas has been borne testimony to by the principal surgeons of North America in a document in which they state that they consider nitrous oxide gas "the most certain of anæsthetics." It is signed by Parker, Marion Sims, Hamilton, Fordyce Barker, Agnew, Emmet, Sayre, Flint, Hammond, &c. Marion Sims has performed operations with the gas which have lasted an hour or more. Dr. Colton has continued its administration for ten minutes on two occasions. There have been five deaths recorded from its employment, but Dr. Colton is of opinion that the fatal issue resulted from other causes. Not a single fatal case has been recorded in the United States during the last six years. Dr. Colton introduced protoxide gas into the London Dental Hospital in 1867; in 1868 Mr. Haynes Walton commenced its use in eye operations at the Central Hospital, London. It is now employed, we may say, almost universally by all qualified dentists, and the combination of the gas with ether, as practised by Mr. Clover, is familiar to every operating surgeon. We have ourselves done many short operations under the gas,

administered by Mr. Joseph Corbett, jun., of this city, and always with a satisfactory result. Dr. Rottenstein devotes a chapter to the chemical constitution, and properties, and the preparation of the principal anæsthetics. The apparatuses of Messrs. White & Johnson, of New York, are figured, which enable the surgeon to administer the gas conveniently—the one portable, the other on a small, neat, tripod stand, for use in the study.

Dr. Rottenstein thus sketches the history of the elaboration of sulphuric ether, indicated in the writings of Raymond Lulle, Paracelsus, Basil Valentin, particularly described by Valerius Cordus in 1540 as naphtha vitriol, obtained in a state of purity by Frobenius, a German (1730), who named it ether; its chemical properties were published by Grosse and Duhamel (1734); Frederic Hoffmann, in 1795, drew attention to its medicinal properties; more exact analyses were made by Theodore de Saussure in 1807 (a combination of hydrogen bicarbonate and water), adopted by Gay Lussac, defended by Doullan and Dumas; Berzelius discovered the radicle ethyl; Liebig, in 1834, announced that it was an oxide of ethyl—a fact more completely established by Williamson of late years. The dangerous inflammable and detonating properties of ether, when it is mixed with air, and brought in contact with an igniting substance, are well known—hence the caution required by the surgeon in using this anæsthetic with any of the modern means of cauterising, more especially the thermo-cautery of Paquelin or the different kinds of galvano-cautery. The administration of pure anhydrous ether should be insisted on when it is used for the purpose of general anæsthesia. Many times it has occurred to us to see all the unpleasant effects attributed to ether result from the employment of a kind which we subsequently found was not chemically pure or of the required specific gravity.

Dr. Turnbull has drawn special attention to the use of bromide of ethyl or “hydrobromic ether,” as an anæsthetic, which property Robin had noticed. Rabuteau, of Paris (“Comptes Rendus,” Vol. LXXXIII., p. 1,294), showed how rapid its action is, as compared with chloroform—from two to five minutes sufficed for the *anæsthesiation* of dogs—and its effect in soothing pain in doses of from fifteen to twenty drops inhaled. It possesses properties, says Dr. Turnbull, intermediate between those of chloroform, bromoform, and ether. Dr. Turnbull was the first to administer it to man. It appears to be eliminated almost entirely by the respiratory passages, only the smallest traces being found in the urine; it does not decompose

in the organism to form an alkaline bromide. It is prepared (De Vrij) by distilling powdered bromide of potassium (4 pts.) with a mixture (5 pts.) of strong sulphuric acid (2 pts.) and alcohol (1 pt.). Dr. Turnbull applied it locally to the auditory passage, mixed with glycerin and water, and has frequently given it internally to relieve tinnitus aurium not dependent on organic ear change. We prefer generally the use of the hydrobromic acid or the nitrite of amyl, though we have used the hydrobromic ether with success. Dr. Turnbull cites several cases in which he produced anæsthesia, with quantities varying from two to three or four drachms given on a towel or handkerchief, or on Allis's inhaler (to be afterwards described), in from one to five minutes. His experience appears to confirm that of other observers—the absence of vomiting, the rapidity of recovery, the short stage of excitement; and altogether it would appear that the bromide of ethyl possesses special advantages over ordinary ether, having little effect on the brain, and no tendency to produce syncope or asphyxia.<sup>a</sup> In the ether prepared by means of phosphorus, the latter agent, if any remains, is apt to produce effects on the pulse causing intermission, and Dr. Turnbull attributes the mustard-like odour that remains after its administration to the presence and decomposition of phosphorus. Other anæsthetics, less frequently employed, we shall specially refer to subsequently.

Dr. Rottenstein devotes the entire of two lengthy chapters to the "general action of anæsthetics on the economy"—more especially, however, considering that of nitrous oxide gas. The respirations, as a rule, according to Bouisson, increase from 20 at the commencement to 25 at the third, again to descend to 19 at the sixth, and 17 at the twelfth minute, during anæsthetisation with ether. Carbonic acid and anæsthetic vapours are found in the expired air, but Dr. Rottenstein does not admit the fact (Landouzy) that the expired air is inflammable during etherisation. There can be no doubt that the "ideal in anæsthetisation," as M. Simonin has pointed out, would be to so increase the action of the anæsthetic as to avoid that "collapsus du pneumo-gastrique" that suddenly launches on us all those terrible symptoms that indicate this failure—to administer it "si l'on peut s'exprimer ainsi, à côté des pneumo-

<sup>a</sup> Internally he gives the following formula:—

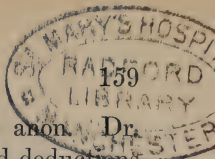
R. Æther. hydrobrom.,	. . .	℥ xx.
Glycerini,	. . .	ʒ iv.
Pulv. Acaciæ,	. . .	ʒ ii.
Aquæ font.,	. . .	f. ʒ j.
M. ʒ j. ter die.		

gastriques." The fall of the pulse, which follows the invariable rise during the period of excitation from anæsthesia, indicates, says Dr. Rottenstein, "the moment when the surgeon can exercise his art with the greatest security." Dr. Turnbull noticed the increase in the circulation in hydrobromic ether inhalation from 100 to 160 in the minute; this is more than ordinary, from 120 to 140 giving, we think, the average increase. To this, however, we have many exceptions, and we have frequently been surprised at the slight disturbance in both the circulation and respiration during the early stage.

Dr. Rottenstein quotes the familiar experiments of Claude Bernard, in which the skull having been trephined, and the membranes exposed, the brain was protruded into the orifice made with the trephine during the period of excitation, at the same time that there was evident hyperæmia, but it sank back again, and became pale during the state of confirmed anæsthesia. Dr. Rottenstein dwells on the resistance existing between the vagus and sympathetic as explaining the want of isochronous action between the pulse and respiratory movements during anæsthesia. This turbulence of the brain and consecutive anæmia bears on an interesting discussion, into which Dr. Rottenstein enters further on, interpolating the remarks of Claude Bernard ("Leçons sur Anesthésiques") as to the analogy between the natural and anæsthetic sleep. The latter physiologist refers to the experiments of Mr. Durham (*Guy's Hospital Reports*, 1860), the experiences of Hammond (then of the United States Army), and of Bedford Browne (*Amer. Journ. Med. Science*, Oct., 1860); the two latter surgeons have been enabled to observe the vessels through considerable apertures in the skull caused by injury, and in which these alternations of anæmia and hyperæmia were observed both during anæsthesia and natural sleep, to be still further verified by the experiments of Sansom on frogs (*Med. Times and Gazette*, 1864). These observations accord with the hyperæmia well known to exist in the secretory glands when in action. The apparently contradictory evidence of others that there is congestion of the brain during anæsthetic sleep, Claude Bernard attributed to the coincidence of asphyxia, and the resulting congestive state of the vessels, should this asphyxia precede the anæsthesia. The abolition of function of the sensitive nerves is essential to the anæsthetic state. This result may equally follow, Claude Bernard thinks, whether from want of blood in the brain to permit of central excitation, or from carbonised blood circulating in the brain centres, the consequence of



asphyxia. In an intermediate state, when there is simply an increase of blood, then the central cells are in a hyper-excited state, as in the early stage of anæsthesia. The analogy then between the natural and anæsthetic sleep is striking. The practical conclusion is obvious. In administering an anæsthetic, we must keep clearly in view its action, and imitate, in the induction of the pathological condition, the normal physiological process. The relation between the acceleration in the beats of the heart on the one hand, or their diminution on the other, and a condition of increased or diminished arterial tension, to which more particular attention has been drawn by Ludwig, has a special bearing on the action of anæsthetics. This diminution of tension which occurs under their use may be due to their special action on the “nerfs dépresseurs,” whose connexion with the cervical sympathetic (superior cervical ganglion) Ludwig and Cyon have demonstrated, and the electrification of which produces a considerable fall in the arterial tension and dilatation of the abdominal vessels. On the other hand, the “accelerator nerves” (inferior cervical ganglion) demonstrated by E. and M. Cyon, increase the action of the heart. “The spinal cord,” says Vulpian, “does not act directly on the heart, but intermediately through the influence of the accelerator nerves.” The anæsthetic action is first manifested at the nerve centres, through the blood. Longet, says Dr. Rottenstein, considers anæsthesia as a process of experimental analysis, which, in momentarily abolishing function, preserves the organ, and enables us to isolate in the living animal the seat of general sensibility from the seat of intelligence and will. The apparent intoxication, with the attendant hallucination of the first stage, is mingled with the dreams and sensations which are manifested in the incoherent utterances that mark the delirium frequently present. This intellectual disturbance precedes the influence on the sensitive nerves and abolition of sensation, and so it is in the muscular movements—at first the disordered contractions and the struggles, to be followed either by complete relaxation, or more rarely a condition of rigidity, or more so still, a state of tremor. The organic muscles fortunately seldom (more frequently in children) are relaxed, and hence the control over the sphincters which is maintained during anæsthesia. This property of isolating conscious intelligence from the inherent power of the spinal cord in maintaining reflex irritability, and the preservation of contractile energy in the involuntary muscle, it is that makes the use of chloroform in obstetrics of such inestimable



value. But more of this application of anæsthesia anon. Dr. Rottenstein passes over in review the experiments and deductions of Krishaber, Hermann, Jolyet, Blanche, Zuntz, Golstein, Paul Bert, on the physiological action and clinical application of protoxide of nitrogen. Hermann, with a mixture of oxygen and nitrous oxide (one volume to four), besides the other effects, noticed with the diminution of sensibility to pain that the tactile sensibility was preserved for a considerable time; there was a state of excitement; "consciousness was never completely lost, and anæsthesia was never complete;" if deprived of the oxygen by breathing into a spirometer, dyspnœa quickly supervened. On the other hand, with the pure gas all the symptoms and consequences of asphyxia were manifest. The admission of air dissipated these symptoms. Hermann concludes that the elementary phenomena resulting from the use of protoxide are not other than those produced by the indifferent gases; as with hydrogen, on agitating arterial blood with the gas, it became black; venous did not become arterial; the coefficient of absorption of blood for this gas ( $N_2O$ ) is scarcely equal to that of distilled water. Its fatal action on the heart of the frog is manifested more quickly than in the case of hydrogen. Its elimination is experimentally demonstrated to take place through the lungs ("Traité d'Anesthésie," page 85).

Krishaber's experiments were directed to solve these four questions:—(1.) If protoxide of nitrogen produces complete insensibility? (2.) If it causes death like other anæsthetics, and to what are we to attribute the death? (3.) If it offers advantages over other anæsthetics? (4.) In what cases is it specially indicated? He proceeded by a series of experiments on rabbits with the protoxide gas mixed with air, with the gas in its pure state, with chloroform, and by comparing these effects with those produced by depriving them of air—in other words, by asphyxiating them—this latter process being effected by ligaturing the trachea. When giving the gas pure the complete exclusion of atmospheric air was secured by laying bare the trachea, performing tracheotomy, inserting a silver tube, which, when the animal had breathed naturally through it for a few minutes, was connected with a balloon of nitrous oxide gas, and then the trachea was ligatured above (for details of the experiments *vide* "Traité d'Anesthésie," pp. 86–93). Some few of the conclusions of Krishaber are hardly in accord with the best received opinions of the day—viz., protoxide of nitrogen brings about anæsthesia and death in the same manner as chloroform;

simple asphyxia does not produce insensibility, and its effects on the heart and respiration are very different from those of anæsthetics; the nitrous oxide gas is distinct from chloroform in the rapid succession of symptoms, not progressive and regular, early disturbing the heart's rhythm and producing irregularity, and the anæsthesia, rapid in its appearance, disappears as quickly; thus the rapid fatality of the gas counterbalances the advantage derived from its fugitive character; chloroform given "par surprise"—*i.e.*, by making the patient breathe quickly the vapour of chloroform in an atmosphere strongly charged with it—has all the advantage of nitrous oxide in short operations, and air is not entirely excluded, as in the case of the gas.<sup>a</sup> The gas cannot be substituted for chloroform in operations of any length.

The experiments of Jolyet and Blanche were conducted with the view of determining the action of nitrous oxide on the respiration. They found the gas arrested the germination of plants, and equally in varying intervals the respiration of different animals. Oxygen if present defeated this result. As to the question whether the nitrous oxide acts like other irrespirable gases, hydrogen and nitrogen, or by solution in the blood by its specific effects when carried to the nerve-centres, to this end different animals were made to breathe various mixtures of nitrous oxide and oxygen, also the pure gas, with this result, that the animals could breathe the artificially mixed atmospheres (18–21 per cent. oxygen—60–80 nitrous oxide) during a sufficiently long

\* At the International Medical Congress (America), 1876, in an operation for excision of the hip, while chloroform was administered by Dr. Sayre's son, Dr. Sayre said that his plan of using chloroform was entirely at variance with that taught in the books and with the doctrine of most authorities—*viz.*, that air must be inhaled with the anæsthetic. Air, he said, was the antidote to the anæsthetic, and as long as it was introduced anæsthesia would be prevented; he, therefore, carefully excluded all air not saturated with chloroform, and found that five, ten, fifteen, or twenty drops thus administered—according to the age of the patient—produced prompt anæsthesia, without that muscular resistance and contortion of the body which followed its administration mixed with air. If, by any possible contingency, this small quantity should produce dangerous or unpleasant symptoms, a few artificial respirations, effected by compressing the chest, would exhale the small quantity of poison, and thus avoid any fatal result. When chloroform was given in the usual way—*i.e.*, mixed with air—anæsthesia was not produced until a large quantity had been inhaled—in some cases many ounces—the patient during this time struggling violently; and the damage done to an inflamed joint by these struggles more than counterbalanced the good resulting from the anæsthetic. If, under these circumstances, failure of the heart or respiratory organs took place, the system was so saturated with the chloroform that resuscitation by artificial means was almost impossible. The administration of the drug in the present instance confirmed the correctness of Dr. Sayre's statements.

time without presenting any manifest signs of asphyxia, least of all of anæsthetisation. Experiments were also conducted to ascertain the percentage of nitrous oxide gas contained in the blood at the moment of asphyxiation or anæsthetisation, and the relative effect on the blood of the pure gas and of the mixture with oxygen. When the animals breathed the pure gas, speaking generally, the carbonic acid was very slightly decreased, the oxygen considerably diminished, and the protoxide increased. Arterial blood became very black. It would appear that the anæsthesia was due to the deprivation of the blood of oxygen, as when the nitrous oxide was present in almost the same proportion, but mixed with oxygen there was no anæsthesia; the percentage of nitrous oxide present in the blood when insensibility commences is from 30 to 40; the proportion of oxygen 1 to 2 or 3 per cent. Jolyet and Blanche looked on nitrous oxide gas unfavourably as an anæsthetic by reason of these asphyxiating qualities. Golstein conducted his experiments in the laboratory of Pflüger at Bonn with the assistance of Professor Zuntz. They failed to arrive definitely at a conclusion as to whether the small quantity of oxygen found during the decomposition of the protoxide of nitrogen was utilised in the system, but they proved that not alone the blood but the other organic liquids of the body absorb the gas. Frogs respiring pure nitrous oxide gas lost all reflex excitability at the end of five minutes, whereas with hydrogen the reflex excitability continued for a quarter of an hour. Golstein concluded that the absence of oxygen was an essential in the action of the nitrous oxide, and the rapid recovery on the admission of a small quantity of air shows how the interruption of asphyxia arrests that action. He distinguishes three phases in the asphyxia of the nitrous oxide; in the first the respiratory acts are diminished, and this stage corresponds to the first phase of ordinary asphyxia, whereas in the second phase active breathing ceases much more quickly than in ordinary asphyxia (65 ( $N_2O$ ) to 102–108 seconds—asphyxia); sensibility also is lost in the second phase of nitrous oxide asphyxia, it is preserved in ordinary asphyxia; hence the advantage of the former—“l’anesthésie étant déjà obtenu dans cette seconde phase, il est complètement inutile pour le praticien de continuer la narcotisation.”

The third phase of the nitrous oxide asphyxiation differs altogether from ordinary asphyxia (ligature of trachea), in that the convulsions common to the latter are absent; the narcotism produced



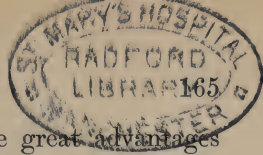
by the gas (Hermann) prevents the convulsive movements. In the rabbit and the dog anæsthesia commenced from thirty to forty seconds from the beginning of the inhalation; complete asphyxia did not set in for a minute more. In man Golstein calculated the period of anæsthesia at from sixty to sixty-five seconds from the commencement of administration.

Dr. Rottenstein furnishes in tabular form the results of a large number of experiments on animals, showing the effect on the pulse, respiration, and blood-pressure in the administration of nitrous oxide, nitrogen, hydrogen, and in ordinary asphyxia, bearing on these conclusions of Golstein. M. Paul Bert (*"Mémoire lu à l'Académie des Sciences le 11 novembre, 1878"*)—attracted by the difficulty of administering nitrous oxide gas without the admission of air, and hence the simultaneous occurrence of asphyxia and anæsthesia—endeavoured to prolong indefinitely the anæsthesia, and so utilise the gas for lengthy operations. Starting with the knowledge that the tension of the gas (pure) must be equal to one atmosphere, in order that it may diffuse in sufficient quantity through the organism—that is, under normal pressure, cent. per cent., by placing the patient so that the pressure could be increased to two atmospheres—he conceived the idea that we might obtain the desired degree of tension while admitting fifty per cent. of air—thus maintaining in the blood the normal quantity of oxygen, and permitting of the respiratory acts. A mixture of five-sixths of protoxide and one-sixth of oxygen gives exactly a tension equal to one atmosphere. Placing in a chamber, under the increase of pressure of one-fifth of an atmosphere, a dog, and making him breathe the above mixture, the animal, after a few minutes, was completely anæsthetised—evidenced by complete insensibility, continuing for an hour without change. The blood preserved its red colour, the heart-beats their force, the temperature its normal degree, and reflex excitability was maintained; recovery occurred after a few free respirations of air, so far as sensibility, will, intelligence; the animal regained its vivacity, and, when liberated, walked. This rapid recovery M. Paul Bert says indicates that, not as in the case of chloroform, the nitrous oxide is simply dissolved in the blood, escapes quickly by the lungs, and does not form any chemical combination; in destroying the nervous sensibility it does not prevent the reflex acts of organic life; while the ready return to the normal state, when life is endangered, through the free admission of air, *"fait que l'opérateur est toujours maître*

de la situation." The practical application of the principles of M. Paul Bert and his apparatus we shall notice subsequently. The conclusions to be arrived at (Rottenstein) from all these experiments are:—Nitrous oxide gas dissolves simply in the blood, forming no chemical combination, in no way replacing the oxygen of the air; the gas disappears from the blood almost immediately after the suppression of inspiration; all the inconveniences of chloroform are thus avoided. The experience of Sir Humphry Davy of the action of nitrous oxide gas when mixed with air, and to which it owes its name, is the same as that of all subsequent observers. That the anæsthesia produced by the pure gas should be attributed to the asphyxia caused by the interruption to the admission of air is the opinion of some, while others hold that the asphyxia is but a secondary and hurtful consequence, preventing the prolonged administration of the gas and the narcotisation peculiar to its presence in the blood. These latter observers point to the facts that the anæsthesia precedes the asphyxia, that it is due to a special action on the nervous system, and that the narcotising influence is entirely independent of the asphyxia; as also, that the reason the mixture of air and gas is devoid of this influence, as explained by Paul Bert, is simply because the tension of the mixture does not permit a sufficient quantity of the gas to enter the blood, while, if we regulate the tension by altering the pressure and the proportion of oxygen to the gas, all its effects are produced, and this without those physiological results which follow the use of the pure gas, when asphyxia speedily ensues and complicates these effects.

Dr. Turnbull details the results of a number of experiments conducted to test the accuracy of Sansom's observations on the physical changes in the blood-corpuscles. All these seemingly tend to refute Sansom's conclusions. Whether with ether, chloroform, or nitrous oxide, there was no disintegration, no change in the blood-corpuscles either in man or in the lower animals. Different, it would appear (from the observations of Binz and Heinrich Ranke), is it in the case of the cerebral and muscular tissue—(morphia), chloral, ether, and chloroform, according to the former observer, entering into combination with the cerebral substance and opposing change in it. So the latter observer has noticed that, while in the early stage of ether or chloroform anæsthesia the muscular tissue itself responds to direct stimulation, no contraction can be induced through irritation of the motor nerves; finally, that the muscular tissue itself ceases to respond to powerful inductive currents, though the

electro-motor force is unweakened, passing ultimately into a state of rigor, and that this rigor depends upon a coagulation of the myosin (Turnbull, "Mode of Action of Anæsthetics," p. 180). "It is conceivable," says Turnbull, "that an action which in its final stages leads to coagulation of albumen, may, in its earlier stages, render, to a certain extent, fixed and immovable the albuminous molecules in the ganglion cells of the brain, and afterwards in nerve and muscle; the effect passing off with the removal of the cause." Morphia does not participate in this action. Here again we have a distinct difference between the action of nitrous oxide gas and chloroform and ether. The spectroscope has been availed of in determining the effect of nitrous oxide gas on the blood. Dr. Turnbull quotes from Dr. Waterman ("Proceedings of American Dental Congress," &c.) on "the Beauties of the Spectroscope and its Relations to Anæsthetics," with reference to the researches of Hoppe Seyler, Gorup Besanez, Preyer. The results obtained by Dr. Waterman but serve to verify those arrived at by physiological experiment—a deoxidation of the blood, shown by disappearance of the oxygen bands, and the appearance of a blood reduction band; but the oxygen blood bands reappear when air is admitted. The spectroscope (Preyer), however, shows this important fact—that, if the inhalation of nitrous oxide gas be continued, permanent changes are apt to occur, but more frequently transient—changes which are dangerous to life, inasmuch as new compounds are formed, owing to the oxidation of the nitrous oxide and a resulting decomposition of the hæmato-crystalline into hæmatine, through the action on the former of hyponitric acid. This means a deprivation of the blood of oxygen in the first instance, and the formation of a distinctly harmful substance in it in the second. On the other hand, Dr. Turnbull himself took the gas, and had his blood examined by the micro-spectroscope, and there was no change; nor in that of Dr. Thomas, also examined by the spectrum, nor in the blood of pigeons and rabbits experimented on. Dr. Rottenstein dwells on Clover's method of administering nitrous oxide and ether, for which he has devised and describes a very portable form of apparatus; but we have seen Mr. Clover this year thus anæsthetise a patient with a most convenient apparatus, quite portable, and simple in construction, the patient being rendered insensible by the nitrous oxide and the anæsthetic state prolonged by means of ether without changing the mouthpiece. The avoidance of the period of excitation and the feeling of suffocation, the struggles of



the patient, the economy of time—these are the great advantages of the combined method of Clover.

Chapter VII. of Dr. Rottenstein's treatise deals with the accidents which often accompany and follow the administration of anæsthetics. These he divides into "accidents immédiats" and "accidents tardifs et consécutifs." Dismissing minor inconveniences and troublesome symptoms—more frequently the fault of administration than of the anæsthetic—such as vomiting, struggling, furious delirium, retraction of the tongue, he regards the occurrence of syncope and asphyxia as the two most alarming accidents occurring before the patient has lost his senses, and these are the more immediate precursors of approaching death. This syncope may be due to organic disease and previous illness, or it may be that wounds have destroyed the necessary power of resistance in the nervous system, or the occurrence of hæmorrhage, perhaps the most fertile of all causes. There is the initial syncope (of Claude Bernard), due to a sudden arrest of the heart, before the commencement of "la période chirurgicale," as we see in chloroform; there is the secondary syncope, during the surgical period, when the nervous shock and hæmorrhage or other causes are operating. The asphyxia which has its origin in a falling down and back of the tongue should always be avoided by careful supervision of the respiratory movements, by elevation of the lower jaw, and by drawing the tongue forwards with a forceps. "*Nous ne saurions trop répéter aux chirurgiens que la mort par syncope est presque le privilège exclusif de l'anesthésie par le chloroforme, qu'elle n'a jamais été observée par l'éther et qu'elle est absolument impossible pendant l'anesthésie proto-azotique.*"

Dr. Rottenstein disputes the conclusions of MM. Richet and Rochet as to the accidents produced by anæsthetics, whether chloroform or nitrous oxide, occurring within twenty-four hours after the administration. These may be rather attributed to the secondary consequences of the operation—induced, it may be, by shock, hæmorrhage, cold, and pulmonary congestion as a consequence. Bordier published a case in which contraction of the pupils, general congestion of the face, and a state of partial insensibility lasted for some hours after the inhalation of nitrous oxide gas,<sup>a</sup> relieved by

<sup>a</sup> After the administration lately, by Mr. Corbett, in our presence, of nitrous oxide gas, to a lady aged forty, a tendency to syncope and dyspnoea, with pain referred to the region of the heart, caused such alarm some hours after the operation (the extraction of several teeth) that we were hurriedly sent for. The attack passed away in a few hours.



the administration of quinine and strong coffee. He thinks that this effect is due to a paralysis of the sympathetic, with resulting dilatation of the vessels, and that the employment of the gas should be avoided in cases in which we dread cerebral congestion, and in which the nervous system (central) is very impressionable. Rottenstein does not participate in those fears of Bordier, and he believes that in the cases quoted by Labbé, in which the gas produced dangerous accidents, the gas used was not pure; the presence of some binoxide of nitrogen would account for all the dangers attributed to the protoxide. Chassaignac first drew attention to the shivering which follows the use of chloroform. These rigors indicate a sudden fall in the animal heat, and may, if active measures be not taken to restore and maintain it, end in death. This alarming and death-like cold we recently saw in a case where ether was administered for the removal of a painful neuroma; it was with the greatest difficulty that heat could be restored, and the condition of the patient was most alarming, it being almost impossible to rouse her, and the heart's action becoming extremely feeble. Chloroform certainly is the anæsthetic from which this accident is most to be feared. The anæsthetic stupor which follows the use of chloroform is generally harmless, but should it last for some hours, or should the temperature fall, and the heart's action suffer, active means should be adopted to rouse the patient out of it. In December, 1878, Dr. Maurice Perrin made a communication to the Academy of Medicine on the accidents which result from the employment of impure chloroform. The delay in the production of anæsthesia, the occurrence of vomiting, the consecutive unpleasant head symptoms, he associates with impurity in the chloroform. M. Guyon did not quite agree with those ideas of M. Perrin. He found vomiting more frequent in women than in men, and next in children. He attributes this accident to a special idiosyncrasy on the part of the patients, and to the action of chloroform itself. The chloroform specimens complained of by M. Perrin gave a red colour when tested by the sulphuric acid test. We think the belief is general in this country that it is of primary importance to use pure chloroform, that delay frequently occurs from the use of an impure variety, and this result we have ourselves proved and tested in the case of patients in whom difficulty occurred to induce anæsthesia. The accident of rapid fall of temperature is not sufficiently guarded against, more particularly in winter weather, perhaps at the time, the thermometer

being very low. Also, it must be remembered that patients frequently are brought from their warm beds in the morning, when the body temperature is naturally a shade higher than normal, and suddenly submitted to the effects of the cold air of an operating theatre, in which a fire has been only recently lighted—hence special care should be taken to prepare the temperature of the room in which an anæsthetic is administered, and to keep up the temperature of the extremities, and ready means at hand to promote or restore warmth in case of emergency, and this applies to all anæsthetics.<sup>a</sup> As regards the general measures to be adopted before anæsthetisation, Dr. Rottenstein draws special attention to the necessity, with chloroform and ether, for the administration on a fasting stomach. For some time we were in the habit of giving a small quantity of brandy and milk about an hour before operation; lately, if we can manage to operate early, we have not done so; to avoid vomiting, we must operate on an empty stomach. The best position for chloroform or ether is the horizontal or semi-lateral one; the apprehensions of patients should be allayed with tact and firmness. It is needless to remark that all the necessary apparatus for restoring a patient, in the event of any accident, should be at hand.

Chapter VIII. of Dr. Rottenstein's work is devoted to the consideration of the treatment of accidents. He enters at length into the method introduced by Nélaton of total inversion. He introduces a letter from Dr. Marion Sims giving a *résumé* of the present practice in America as regards anæsthetics. Marion Sims performed an ovariectomy that lasted one hour and a half under nitrous oxide gas. The disadvantages, he says, of this agent are its costliness, it necessitates a special aptitude on the part of the operator, and there is the uncertainty in producing the necessary muscular relaxation. Ether is the great American anæsthetic. Sims says:—"Je considère le chloroforme comme un agent anæsthésique tellement dangereux, que je voudrais que son emploi fût interdit pour la chirurgie générale, et réservé seulement à la pratique obstétricale." He then refers to the association of Nélaton's discovery with the surgeon's view of the cause of the syncope in the cerebral anæmia, and the possibility of arresting the syncope by re-establishing the circulation in the brain, which he proposed to do by inversion. Sims quotes a most interesting case in which, as far back as 1861, Nélaton restored a patient by his method of inversion, on whom

<sup>a</sup> See second part of Report, on the Cause of Death from Ether.

Marion Sims operated. The patient was inverted for a quarter of an hour, and on a recurrence of the syncope each time that the horizontal position was assumed the patient was again inverted, and ultimately, after all appeared for a time hopeless, with the aid of artificial respiration the patient breathed in the inverted position. We have ourselves on two occasions, after chloroform inhalation, when most alarming symptoms declared themselves, seen Nélaton's method employed with the happiest result. Sims advises for the syncope resulting after chloroform, total inversion, artificial respiration practised during inversion, inhalations of nitrite of amyl to excite respiration and restore the heart's contractions, electricity.<sup>a</sup> Dr. Rottenstein gives special directions for the introduction of the tracheal tube in performing tracheal respiration—modifications of the insufflators of Chaussier or Tarnier for the newly-born answer admirably. Tracheal insufflation “qui constitue le seul procédé régulier et scientifique qu'on puisse appliquer au traitement de la syncope chloroformique.” In discussing the methods of Marshall Hall, Sylvester, Pacini, Howard, Dr. Rottenstein gives precedence to that of Pacini, in which the patient is placed on an inclined plane, the operator standing behind his head, the thorax free of encumbrance, the head supported, the hands are placed in the axilla with the thumbs in front and the other four fingers behind, so as to grip the shoulders, and at the same time, when he draws them towards him, to elevate the clavicles some sixteen times in the minute. Should the patient be very robust, two persons must operate. The thorax is enlarged in all three diameters; the diaphragm is passive.

In 1878, at the British Medical Association meeting held at Bath, we had the pleasure of seeing Mr. Howard's “direct method” of artificial respiration demonstrated by the inventor on a living subject. Mr. Howard's long experience in the resuscitation of the apparently drowned gives a special value to his advocacy

<sup>a</sup> Dr. Turnbull quotes five cases in which nitrite of amyl was used successfully in syncope from chloroform; also one in which both it and Nélaton's method failed; and another in which nitrite of amyl, electricity, &c., failed. The records of the cases restored (Brit. Med. Journal, 18th August, 1877; Med. Record, 25th May, 1878; Philadelphia Med. Times, 31st January, 1875, &c.) would suggest the advisability of having ready at hand the glass globules containing nitrite of amyl in the event of sudden syncope occurring from chloroform. The mixture of nitrite of amyl with chloroform has been used by Dr. George Sandford and others (*i.e.*, chloramyl) and strongly insisted on—3 ii. to 1 lb. (Med. Record, 5th October, 1878). We have administered this mixture and can endorse his views. The chloramyl we give with a Junker's inhaler.

of this method:—"The asphyxiated subject is stretched on his back, a pillow or cushion under the ribs, so as to make the chest prominent, the arms elevated above the head, the operator gets his knees in such a position as to have the body of the patient between his thighs. He now applies his two hands flat on the sides of the thorax, the thumbs adjacent to the xiphoid appendix, the fingers spread out over the sides, so as that each finger corresponds to an intercostal space. Then the operator, casting himself forward, so as to bring his face almost in contact with that of the patient, applies his weight and the pressure of his hands during the space of two or three seconds; then he suddenly rises and regains his position on his knees. Resting for a few seconds he reapplies this pressure five or six times in the minute." The epiglottis is thus raised and the glottis opened, when the head is thrown back, in a manner not "realised even when the tongue is drawn forcibly forwards." Faradisation of the phrenic nerves, flagellation, electricity, complete the list of preventive and restorative measures to be adopted in the face of syncope or asphyxia. In the second portion of this Report we hope to refer more particularly to the comparative mortality of chloroform and ether, and enter more fully into the physiological causes of death from the use of the former agent, referring also to several other anæsthetics, and describing some of the most useful forms of inhaler, as also the method of M. Paul Bert in the exhibition of nitrous oxide gas. In a letter recently received from Mr. Clover he says:—"I advise the chin to be dragged up as much as possible away from the top of the sternum whenever the sounds indicate laryngeal obstruction. It will rarely be necessary to catch hold of the tongue with a forceps if this be done." "If the movements of respiration have ceased," he advises at once artificial respiration, "taking care the air passes through the larynx," and drawing out the tongue if the elevation of the chin did not secure its opening. If, despite of artificial respiration, "no air could be heard passing through the larynx, I would at once make an opening through the crico-thyroid membrane, and go on with artificial respiration." In cases of syncope "place the head low and gently use Sylvester." "I have no faith in galvanism." "External warmth by hot-water bottles should be applied afterwards." The reported value of ice placed in the rectum (Bailée) and the subcutaneous injection of atropine should not be forgotten.



*Note.*—Dr. Turnbull, in writing of the deaths from nitrous oxide gas, cites four cases. The first of these died, not from the effects of the gas, but from the slipping of a dental cork prop, which had no string attached, into the larynx. The second death occurred when several loose teeth had to be extracted, and in which *two inhalations* only of the gas were taken, the patient peremptorily refusing to have any more. Death was clearly to be attributed, in a highly nervous, anæmic patient, not to the few inhalations of the gas, but to the fright and nervous apprehension which caused arrest of the heart's action during the extraction of the teeth. The heart was here found healthy, but without fluid in the ventricles. The third was the case of a patient who died under circumstances from which it is impossible to say how much gas was inhaled, as he administered the gas partly to himself, and, as Mr. Clover subsequently showed, we are ignorant of the time occupied by the course of symptoms which preceded death, or what had been previously swallowed. Here, again, Mr. Clover was of opinion that death must be attributed rather to the shock of a severe operation in a debilitated subject—for the death did not occur during but subsequently to the operation—than to the action of the gas—a shock more readily precipitating a fatal issue in a heart not perfectly healthy. A fourth case, the particulars of which are not given, Dr. Turnbull quotes from the *Dental Times* (Vol. I., page 157, New York), *following* the inhalation of the gas, the operator being Mr. José R. Brunet. The fifth case occurred at Exeter. A lady, thirty-eight years of age, had a tooth extracted under the gas; death occurred suddenly *after* its exhibition.<sup>a</sup> It thus appears that in every case in which death has taken place it was after the gas was withheld and its administration ceased.

[To be continued.]

<sup>a</sup> In one instance (we cannot place our hand on the particulars) a "wisdom tooth" was, we believe, found in the trachea. The extraction of these teeth, whether with gas or ether, is not without risk. In dental operations, if many teeth be extracted under ether, there is the danger of a soft clot slipping through the glottis. During recovery, while the patient's mouth is closed, unless the head be held well forward, this danger is alarming, if the hæmorrhage, as it at times is from the molar teeth, be severe.



## PART IV.

### MEDICAL MISCELLANY.

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*Reports, Transactions, and Scientific Intelligence.*

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#### TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

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SESSION 1880-81.

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GEORGE JOHNSTON, M.D., President.

ALEXANDER NIXON MONTGOMERY, M.K.Q.C.P., Honorary Secretary.

*Wednesday, January 5, 1881.*

DR. GORDON in the Chair.

#### *Aortic Valve Disease.*

DR. C. J. NIXON exhibited a specimen illustrating patency of the aortic valves, and made some comments on the case. [His communication will be found at page 101.]

DR. WALTER SMITH (Vice-President) read a paper, accompanied with a specimen, entitled "A Case of Aortic and Mitral Valve Disease, with Venous Pulse on the Backs of the Hands." [His paper will be found at page 109.]

The CHAIRMAN said that with respect to Dr. Nixon's case the important practical point had reference to the prognosis of aortic valve disease. The anatomico-pathological point brought before them was of comparatively recent date. Aortitis was almost always followed by enlarged, dilated, or elongated left ventricle, producing secondary mitral valve disease. This was first noticed by Dr. Gairdner, who—as accurate observers had often done in other cases—left it to others to deduce practical conclusions; and this had been well done by Dr. Nixon. When supposed formidable cases of double cardiac lesion—combined aortic and mitral valve disease—were shown to him, he (the Chairman) used to think that it was so much the better for the patient, provided the valvular disease was not of an aggravated character. With regard to venous pulsation, he had himself many years ago a very remarkable case of it. The patient, a young woman, was afflicted with

a very aggravated form of ascites, combined with cardiac disease. The ascites was of considerable standing, and had produced an effect which many were familiar with. The superficial veins of the abdomen were literally lying in beds arranged, as it were, for them. When the patient came under observation the disease was very far advanced, and she lived only a few days. The diagnosis was mitral valve disease, combined with extreme fatty degeneration of the heart; and the venous pulsation was to a large extent produced by the collapsing condition of the heart combined with the mitral valve disease.

DR. HENRY KENNEDY, speaking of the Cheyne-Stokes' respiration, said that Dr. Hayden's view was that it was connected with dilatation of the aorta; but a number of cases were recorded in which there was no dilatation of the aorta, and in which that form of respiration existed in a marked form. On the other hand, a great many supposed that it was due to fatty degeneration of the heart; and for a long time that view was held, until Dr. Hayden brought forward a case which showed that a heart could be perfectly healthy as regarded its texture, and that Cheyne-Stokes' respiration might yet be present. In that case the diaphragm was found to be fatty; and that favoured the idea that the disease was due, to some extent, to the state of the diaphragm. He had had three cases under notice in Simpson's Hospital, and his idea of the phenomenon was that it was due to a change in the nerves that went to supply the heart. This was, to a certain extent, borne out by Dr. Nixon's statement. The effect of an interference with the cardiac branches of the pneumogastric nerve was to slow the heart; and the right pneumogastric had been shown to have very much more influence over the heart than the left. With respect to the venous pulsation in Dr. Smith's case, they should look for some other cause of it besides what he had assigned, because every day they had instances of violent action of the heart in which there was no venous pulsation. The phenomenon was notoriously a very rare one. His opinion was that they should look for the cause of it to some deranged state of the coats of the vessels. He could understand the capillaries becoming so changed in their texture as to occasion this remarkable phenomenon. Such a change might take place even in the veins themselves.

DR. MYERS (Coldstream Guards) said Dr. Nixon's case was an example of a disease in which he was specially interested. It was typical of the heart disease produced in soldiers by labour enforced, with compression caused by clothing. In most of the cases of this disease in soldiers, which he had examined *post mortem*, he had generally found a changed condition of the internal wall of the aorta, the stages of this change being different, according to the age of the man, and the length of his service. Such changes, he had no doubt, were in many instances due to syphilis, and he believed that in most cases the disease was due to the

great strain produced on the aorta by exertion under compression. The changes probably proceeded slowly. When the blood was forced through a compressed aorta the other part of the vessel became dilated, and, in consequence, the elasticity of its walls was greatly impaired, if not lost. A changed condition, consequently, took place from that very strain; and this was succeeded by dilatation of the aortic orifice, and consequent patency of the aortic valves. When that took place there was a natural tendency towards an increase of the patency from regurgitation of the blood. Then the left ventricle, to relieve itself, became dilated; and, in course of time, the mitral orifice also became dilated. In other cases, where the aortic valves did not become incompetent, the dilatation of the aorta passed into aneurism. In the present day they had seen very beneficial results from improvements in the uniform and accoutrements of the soldier. For many years aneurism was most common among soldiers. In the London hospitals it was surprising how often it happened that the previous history of a case of aneurism was that the man had been a soldier.

DR. WILLIAM MOORE said that Dr. Nixon had described the two forms of murmur at the base of the heart. In a great many cases of aortic patency it was hard to define the diastolic and the systolic murmurs, these ran into each other so quickly. The patency of the mitral orifice which succeeded the aortic obstruction had the effect of preventing that paralysis of the heart which caused sudden death. Though the patient had much pain, and a sad, lingering life afterwards, still this condition of things tended to prolong life. About twelve or fifteen years ago he saw a great many cases of valvular and aneurismal disease. In every instance he made careful inquiry as to the previous history of the patient, and in every case he was struck with the remarkable fact that the man had served in the army. He had under his care a soldier from the 12th Light Dragoons who died of aneurism. He had made an analysis of all his own cases of aneurism, and of all the other cases of that disease that had been brought before the Pathological Society during thirty-five years, and, excluding females, 35 per cent. of all of them—those from the general hospitals of Dublin included—had occurred either in soldiers or in those employed in some military capacity. He concurred with Dr. Smith in his opinion as to the cause of the venous pulsation. There might be some deficiency in the veins themselves, but he agreed with him that it was a reflected pulsation—that they had the jerk and collapsing condition of the vessels reflected in the tributary veins. If it were derived from the right side of the heart they would have visible pulsation in the superficial jugulars, and when pressure would be made on the veins they would have persistent pulsation from the right side of the heart. He could not reconcile diastolic pulsation with a cause proceeding from the right side of the heart, but he could see that it might



arise in connexion with a pulsation not absolutely reflected, but directly derived from hypertrophy on the left side, and patency of the aortic orifice.

DR. DOYLE observed that Dr. Nixon had alluded to one of the modes of sudden death in aortic regurgitant disease, which, he said, was the sudden giving way of the valve on account of the ventricle not having time to adapt itself to the circumstances. Would the patient have a better chance if the anterior or the posterior valve gave way? He had spoken of regurgitant disease being produced by prolonged disease of the aorta; but when there was a sudden giving way of the aortic valve, and a column of blood came upon the anterior flap of the mitral, why would not a kind of mitral narrowing be produced?

DR. FINNY thought that Dr. Smith had proved his point as to the explanation and mechanism of venous pulsation. As to Cheyne-Stokes' respiration, he (Dr. Finny) believed the evidence showed it to depend on a functional disease of the heart, and not to be the result of any organic change in the valves of the heart or of the aorta. His colleague, Dr. Hawtrey Benson, had submitted at that Society a case of well-marked Cheyne-Stokes' respiration, followed by pathological changes in the fourth ventricle. The case that had impressed him (Dr. Finny) most strongly as to the functional origin of this form of respiration came under his notice within the last half-year. A sailor who had been accustomed to work on board fishing boats in Dublin Bay presented himself to him with many of the symptoms that existed in Dr. Nixon's case. At first he had only one murmur in the heart. He was dropsical, but had no sign of mitral murmur. As the case progressed, Cheyne-Stokes' respiration became extremely marked. The man was treated with tonics, and as his heart improved in strength two things took place. One of these was the development of a second murmur at the base of the heart, which was plainly the obstructed murmur of a weak heart. We had then a double murmur, and it remained during the rest of the time the patient was under observation. The second point of interest was that the Cheyne-Stokes' respiration disappeared altogether. He, therefore, looked on that respiration as not due to any pathological change in the heart, but as entirely of the character of a neurosis. He spoke with more hesitation as to the safety-valve function—as Dr. Nixon had called it—of mitral regurgitation in aortic disease. He was not at all inclined to think that there was any such safety-valve function. The number of cases of aortic patency in which sudden death occurred was by no means so great as they were led to believe; and he did not think it had been proved that patients lived longer because they had mitral valve disease. There was no evidence that this regurgitation at the mitral valve secured the patient a better chance of life. The theory entirely upset his treatment of heart disease

with aortic patency, for the moment he found dropsy setting in he at once took a bad view of the case, and directed his treatment so as to overcome the back working. When a mitral murmur appeared in an aortic case he considered it much worse than if the aortic disease remained uncomplicated.

DR. NIXON, in reply, said he agreed with Dr. Myers in all the observations he had made. The patient was a gunner, and told him that he had been accustomed to severe strains and lifting up weights, holding his breath at the time, and there was not the slightest doubt that these strains set up endarteritis terminating in atheroma, and that, as the aorta became dilated, valvular incompetency was developed. There was strong evidence that atheromatous change in the aorta was generally associated with syphilis, but the atheroma occasioned by strains was not of as marked a character as that produced by constitutional taint. Dr. Finny did not realise his point as to the danger in cases of aortic patency where there was a large amount of blood regurgitating; the greatly increased pressure and dilatation of the left ventricle caused a disturbance in the circulation through the coronary arteries. The increased work that the heart had to do with the disturbance of the coronary circulation, owing to increased pressure in the interior of the left ventricle, brought about degeneration in the wall of the ventricle, and the danger was that it might be unable to contract. The moment it hesitated it never could recover power, and the patient died with the ventricle in asystole. If at this moment a leakage occurred, the tendency to death was obviated; and the result produced by such a condition of the mitral valve might well be described as a safety-valve function. The case Dr. Finny had mentioned of disappearance of the Cheyne-Stokes' breathing when the action of the left ventricle became strengthened, rather supported his (Dr. Nixon's) view as to that breathing being produced by arterial anæmia of the medulla. Dr. Smith had mentioned a case recorded by Dr. Benson in which venous pulsations existed with aortic regurgitation and mitral narrowing. Here were two conditions affecting in a considerable degree the elasticity of the aorta. When they considered the mechanism of the circulation it was a wonder that they had not venous pulsation very much more frequently in disease of the left side of the heart than they usually had. They might have venous pulsation in any condition which prevented the development of the elastic force of the aorta. They knew that the principal reason why the circulation was uniform, and they had not pulsation in the capillaries and the veins, was the elasticity of the aorta. In order to bring that elastic force into play it was necessary that the aorta should be distended with blood; but if conditions existed which prevented the elastic force of the aorta from coming into play, the pulsatile force of the left ventricle was communicated to the capillaries, and through these

that pulsatile force was transmitted to the veins. In the case recorded by Dr. Benson they had conditions preventing the elasticity of the aorta coming into play, for they had not alone loss of blood, but an extremely small amount of blood passing into the left ventricle owing to a constricted mitral orifice. That amount was not sufficient to develop the elastic force of the aorta, and consequently pulsations were transmitted to the capillaries, and from them to the veins. A sudden reduction of the entire volume of the blood would in this way explain venous pulsation. With reference to the observations of Dr. Doyle, what he meant to convey was that where one of the valves of the heart suddenly ceased to act the case became fatal, not suddenly, but rapidly; that the dilatation being in excess of the hypertrophy, there was danger of paralysis of the ventricle. When the anterior flaps of the aortic valves were affected they were likely to have the most serious result following, because they are in immediate connexion with the coronary arteries, and the stream of regurgitating blood very considerably affected the circulation through these vessels.

DR. SMITH, in reply, said it was very curious why they did not see venous pulsation oftener than they did. The explanation was in part, no doubt, due to the greater capacity of the venous system as compared with the arterial, the former being three times the dimensions of the latter.

The Society then adjourned.

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#### INCONTINENCE OF URINE AND ŒSOPHAGEAL SPASM.

DR. GIRARD has found subcutaneous injections of sulphate of atropine efficacious where other medicaments had failed. All his cases were those of soldiers who were about to be discharged on account of this infirmity. He begins with a dose of  $\frac{1}{2}$  milligramme, and on the second or third day raises the dose to 1 milligramme. In about a week the patient ceases to pass urine involuntarily, and then the dose is gradually diminished. A case of Œsophagismus, in which the spasm was situated near the cardiac end of the tube, was treated in the same way. During three months the atropine was occasionally withheld, and the malady returned, but at the end of this period a permanent cure resulted. It was observed that the right pupil dilated more than the left when the injection was made on the right side of the body and *vice versâ*.—*Revue Médicale*.

## PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—ARTHUR WYNNE FOOT, M.D.

Secretary—E. H. BENNETT, M.D.

*Pendulous Tumour of the Bladder.*—DR. J. K. BARTON said: This specimen is a contribution to the pathology of the bladder. The case has the following history:—A schoolmistress, aged thirty-eight, came under my observation for the first time at the close of 1877, complaining of irritable bladder. As she was compelled by her occupation to stand for a long time every day during the performance of her duties, I at first imagined that what she complained of was attributable to those causes. However, as general treatment, including rest, failed to give relief, and as symptoms of hæmaturia began to appear I admitted her to hospital in the early part of 1878. I examined the bladder with the sound, but found no calculus. I then dilated the urethra with a Weiss' dilator, which enabled me to introduce my forefinger into the bladder. I then considered that the disease was some kind of villous growth, but whether it was sessile or pedunculated I was not certain, although I had strong reason for thinking that it was sessile, as it projected from the right side of the bladder about half an inch. Treatment was adopted which checked hæmorrhage—a solution of chloride of zinc was injected with marked benefit, and the patient was enabled to leave hospital and return to her duties, which she performed, with occasional returns of hæmaturia, through the entire year. Towards the close of 1878 she was admitted again into the hospital, and the same treatment was resorted to as before. Several times during 1879 it had been applied, and always with the result of checking the hæmorrhage for the time. At the close of 1878 I attempted a more complete examination of the bladder. She was placed under the influence of an anæsthetic. The urethra was fully dilated, and I endeavoured to secure the villous tumour with an ecraseur. I found this impossible, and had to content myself with a free application of nitric acid, which I applied to the surface of the growth, the urethra being protected by a glass tube. This checked the hæmorrhage, and she was again enabled to return to active life for some time. As the year 1880 commenced it was evident that the disease was making progress; the hæmorrhages became more frequent and more difficult to check; and though she was at different times received into hospital, and general as well as local treatment resorted to, it became evident that



she was decidedly losing ground. She remained under observation during the greater part of 1880, off and on, and it was not until a couple of months ago that she finally became a resident in the hospital. There, with occasional intervals, she remained until the time of her death. The immediate cause of death was hæmaturia—combined, however, with menorrhagia, for every time the menstrual period came round the loss of blood increased in severity. The case at length proved fatal with somewhat uræmic symptoms. Throughout her illness the urine was not loaded with blood, but contained a good deal of mucus, which was not, however, the mucus characteristic of vesical inflammation. During the latter period of her illness pus was always present. On examining the bladder we found its muscular coat thickened considerably, as if it had been struggling against a difficulty for a long time. The difficulty is revealed by the existence on the right side, where the right ureter enters, of a pedunculated tumour, of a villous character, and hanging down into the bladder. As it lay there it must have protruded very much into the internal orifice of the urethra, and thus caused the hypertrophied condition of the muscular coat, as it must have formed a great obstruction to the expulsion of the urine. With regard to the growth itself it has very much the look of a papilloma; but as Mr. Abraham made a microscopic examination of it I will ask him to state the result. Suffice it to say that the pedicle possesses vessels, nerves, and fibrous tissue, and round the base of it there is an ulceration, which appears to have perforated the coat of the bladder. The lining membrane of the bladder when first examined was red, in a state of chronic inflammation. There is also a line of ulceration, which probably was the result of chronic inflammatory causes. The specimen is of great interest as a contribution to the pathology of villous growths, which have so often puzzled the surgeon, and the treatment of which is exceedingly difficult. The uterus was also found to be the seat of two morbid growths. The os is large and patulous, and hanging within by a thin pedicle is a tumour of a totally different character from that which hung in the bladder; it is rather soft, and appears to be of a myxomatous growth. It lay across the os uteri, and accounts to a great extent for the menorrhagic symptoms. There is a well-marked myoma lying in the muscular tissue of the uterus. We must fall back on Mr. Abraham's microscopic examination for a solution of the question as to the nature of this tumour. Is it a simple papilloma or a carcinoma?

MR. STOKER asked Dr. Barton could he give any explanation of why the exploration of the bladder with the finger was so difficult in this case?

DR. FINNY asked when the patient suffered from hæmaturia was it associated with bearing-down pains? These were a most prominent symptom associated with hæmaturia in a patient at present under his care.



DR. J. K. BARTON.—PENDULOUS TUMOUR OF THE BLADDER.



MR. ABRAHAM believed the tumours to be carcinomatous.

DR. HAMILTON remarked that the length of time the tumours had existed was rather against the idea of their being carcinomatous growths.

DR. BARTON, in reply, said he had had no difficulty in arriving at a diagnosis in the first instance. He made the diagnosis of the villous character of the tumours at a very early stage of the case, when he first dilated the urethra. He considered that it was a sessile growth which could not be drawn down without doing unjustifiable violence to the mucous membrane of the bladder. There was not very marked straining in the case—at least, not anything like so great as they saw in a great number of cases of cystitis. Inflammation of the bladder which was at all acute in character was generally accompanied with much more pain than occurred here. In the worst attacks there was a good deal of straining, but it was not the most marked symptom. The hæmorrhage was the most marked phenomenon. The naked-eye characters of the tumour undoubtedly led to the inference that it was of a papillomatous origin, and Mr. Abraham agreed with him in that until he examined the pedicle and found epithelial cells dipping down deeply, and showing most distinctly the carcinomatous origin of the growth. The kidneys after death were found to be the seat of chronic suppuration.<sup>a</sup>—November 13, 1880.

*Myoma Testis.*—MR. ABRAHAM said: This is a boy's left testicle of an abnormally large size and structure. The history of the case is contained in the following statement sent to me by Dr. Swan, of Abbeyleix:—

“Richard C., aged twelve; admitted to Union Infirmary August 14, 1880; one of four children, all alive; born of healthy parents. He is an intelligent, healthy-looking boy, without any appearance of cachexia. The tumour was noticed during infancy, and was supposed to be a hernia. It grew very slowly until about a year ago, when its progress became more rapid. On admission a large tumour was found occupying the situation of the testicle. It was very heavy and hard, with a few soft eminences here and there. The integuments in front were adherent and ulcerated at one spot, and tortuous vessels ramified over the entire surface. The penis was concealed, all but the end of the prepuce, and the cord was large and hard; no enlarged glands. During removal the cord was found to be firmly bound down to the pubis by strong, fibrous bands. The inguinal canal was split up in order to divide the cord as high as possible.”

Six weeks after the operation the boy was going about. On cutting into the testicle I found that it was marbled on the interior, and extremely

<sup>a</sup> The Notes on this case were published in the January number, pages 78 and 79.



like sarcoma in texture. I could not find any vestige of the proper gland tissue. A microscopic examination showed that it is chiefly composed of fibrous tissue with unstriped muscular fibres, particularly numerous at the periphery.

DR. STOKER.—Has Mr. Abraham formed any opinion, or has Dr. Swan given any clue to an opinion as to whether it is a tumour of the testis or not? No doubt it is a tumour of the scrotum; but in what condition do the parts remain? Is there any vestige of a supposed testis? Dr. Swan merely says that the cord is hard and enlarged.

MR. ABRAHAM.—Dr. Swan mentions in the note that the cord was cut through, and I think the end of it is quite apparent in the specimen. I have no doubt that is a true tumour of the testis.

The weight of the tumour was upwards of 2 lbs., and it measured 13 centimetres in length and 11 in cross diameter, the shape being an irregular short oval.

*Additional Note.*—A longitudinal cut was made through the thickened cord and into the tumour. The hypertrophied fibrous and muscular bundles of the former were seen to open out and become lost in the substance of the growth, and nowhere in this neighbourhood could any glandular tissue be found.—November 13, 1880.

*Staphyloma Oculi.*—MR. J. B. STORY said: The eyeball which I am bringing before the Society was enucleated this morning by my friend Dr. Benson, and, though there can be no doubt as to the soundness of the treatment, I think we may venture to affirm that the question of diagnosis is still *sub judice*. A discharged soldier, thirty-nine years of age, came to the out-patient department of St. Mark's Ophthalmic Hospital on the 2nd of November, complaining of his right eye, which was almost completely blind. For three years previously the eye had been bad, being sometimes better and at other times worse. After the failure of sight in the eye he had, for the first time, pain in the eyeball. Six months before he came to the hospital he had lost the sight of the eye completely. The other eye had never had anything the matter with it. Before coming to St. Mark's he had been two months in another hospital, and for a fortnight previously had had very great pain in the eyeball, which shot back into the occiput. The upper lid of the affected eye was more prominent than the lower, the conjunctiva injected, the cornea slightly hazy, the anterior chamber empty, and the iris adherent to the lens; the pupil was dilated; the lens itself was completely opaque, so that we could not illuminate the fundus. V.=0, T.=+1. On raising the lid we saw at the upper outer portion of the globe, between the insertion of the superior and the external recti, a bluish prominence about the size and shape of a small almond. This prominence did not appear to be any harder to the touch than the rest of the eyeball; and, though the anterior ciliary system of

vessels was considerably congested at that locality, it did not appear to be congested disproportionately to the rest of the system. The question which Dr. Benson and I wished to determine was, whether the prominence was simply a localised disease in the sclerotic resulting in a staphylo-matous bulging of the globe in that position, or whether it was due to the growth of an intra-ocular tumour working its way through the outer tunics of the globe. Dr. Benson enucleated the eye this morning, and I here bring it before the Society. My own belief is that it is not a tumour, although the history of the case involves some very suspicious symptoms, especially the gradual loss of sight before the occurrence of any pain. Intra-ocular tumours, as a rule, do not push the sclerotic before them in the way seen in the specimen, but work their way through the lymph spaces, and emerge as apparently isolated, sometimes even pedunculated, tumours; or, if they do alter the shape of the sclerotic, they do so by enlarging it as a whole, and not locally. The absence, too, of any especial congestion of the vessels in the neighbourhood of the protrusion is another point strongly against the diagnosis of a new growth. [Having opened the eye in presence of the Society, Mr. Story demonstrated that the protrusion was due to a staphyloma of the globe, without any appearance of new growth whatsoever. Both sclerotic and choroid were very much thinned at the position of the staphyloma, and the vitreous humour was perfectly fluid.] Mr. Story continued:—The details of the specimen are unimportant, as, now that the diagnosis is established, the case has lost its interest, which was solely due to the fact that up to this moment the opinions of the staff of St. Mark's Hospital were not unanimous as to the correct diagnosis. As to the propriety of the enucleation, of course, there can be no doubt.

DR. FINNY asked to what Mr. Story attributed the bulging.

PRESIDENT.—I presume it is the vitreous humour that protruded, as the anterior chamber is dried up and obliterated.

MR. STORY.—A staphyloma may result from injury, or from disease; and, as the history in this case gives no support to the first theory of its production, we must adopt the second. It is not uncommon to find small localised atrophic patches on the sclerotic of old glaucomatous eyes, and the present is simply an unusually large specimen of such a condition.—*November 13, 1880.*

*Stricture of the Rectum.*—MR. THOMSON said: This specimen was removed two days ago by Dr. Harvey from the body of a patient who died in the Richmond Hospital last week. He was admitted a couple of weeks ago, suffering from diarrhœa. He presented himself at the dispensary where I was, and told me his prominent symptoms. On questioning him closely—my attention having been excited by his appearance and aspect—I found that he had been the subject of an

operation by Mr. O'Grady, at Mercer's Hospital, some twelve or fourteen months before, for cancer of the rectum. I have not much of the antecedent history of the case. I expected that Mr. O'Grady would have been here to add some particulars which I believe are within his knowledge. On the morning after the man's admission I found it impossible to introduce my finger into his rectum at all. We examined carefully about what remained of the orifice of the gut, but found it almost impossible to pass even a No. 8 catheter through. From the opening there constantly oozed a faecal fluid; and he was in a state of the greatest misery and exhaustion from this, which began shortly after the time of the operation. As far as I could find out he presented himself to Mr. O'Grady, suffering from what he believed to be piles. On examination it was found that he was suffering in reality from epithelioma of the rectum. Mr. O'Grady removed a very considerable portion of the rectum—so much that it was not possible to bring down the edge of the gut so as to join it to the integument. The result was, that as the case progressed after the operation, the whole of the tissue became simply a cicatricial mass, and had gone on contracting until what was originally a tolerably good orifice of the gut got into the condition which I have described. The man's condition was simply one of weakness depending on this constant drain from his bowels. He had never had any pain, and was astonished to find, when he went to Mr. O'Grady, that he was suffering from cancer. An examination of the abdomen showed that, at all events, there was no lodgment in the bowel, and the faecal matter was got rid of almost as soon as it was formed. I suggested a further operation in order to make him a little more comfortable; but the man himself dissented, and thought he would go into the Incurable Hospital. He was to have become a candidate on Tuesday next, but in the latter end of last week he rapidly sank and died. Dr. Harvey, on making an examination of the body, found that, just a little above the sigmoid flexure of the colon, there was a distinct constriction. It did not occur in the gut itself, but was really caused by a portion of the mesentery which seemed to bind it down, for, when he cut through the ligamentous structure, the stricture disappeared. There was no lodgment in the colon or in any portion of the bowels. Coming lower down he found that, corresponding to some inches of the rectum that had been removed, there was a very hard mass of tissue surrounding the whole bowel and extending from above downwards for about an inch. The bladder is not affected by any secondary disease. It is a good example of the thickening we often see in old-standing prostatic disease. The enormous thickness of the walls is well shown; but the prostate gland itself is not the subject of infiltration or secondary disease from the immediate neighbourhood of the cancer—a fact which has been very frequently noticed, for the prostate seems to escape secondary infection for a long time

indeed. Examining farther into the condition of the viscera, Dr. Harvey found in the liver no secondary deposit whatever of a cancerous nature. He found the left kidney studded with a number of nodules, some much firmer than others and of a pale colour. The left common iliac vein was perfectly flattened and collapsed when the body was opened, and within it he found a clot of considerable size, but rather pale colour, which was adherent to the walls. The vena cava itself was blocked up by a clot of turbid fluid, which has been unfortunately lost. With reference to the secondary deposits in the kidneys, Dr. Harvey says he has no doubt that they are cancerous, but he will make them the subject of another communication. With respect to the clinical history of the case, a remarkable point was the absence of pain throughout.—November 13, 1880.

*Renal Disease simulating Vesical Calculus.*—DR. BOYD said: These are the kidney and bladder of a patient who died in St. Michael's Hospital the 13th of the present month. He was admitted three days previously for symptoms that at first seemed due to diabetes, as he complained of most urgent thirst, which nothing seemed to relieve, rapid emaciation, and continual diuresis, voiding up to a couple of quarts of urine in the twenty-four hours.

On examination, however, when I got him to bed, I found the diuresis to be due, in reality, to retention, and to be nothing more than overflow from the bladder, which was to be felt greatly distended above the pubis. The retention was due to enlargement of the prostate, and considerable difficulty was experienced in getting a catheter into the bladder. I drew off a pint of very dark urine, which showed on analysis a low specific gravity, and contained albumen, and showed on microscopic examination blood-corpuscles, pus, and vesical epithelium, with a large quantity of mucus. The patient had a dry brown tongue, a soft weak pulse, and dry skin. There were no symptoms of dropsy complained of at any time by the patient, and with the exception that his urgent thirst and diuresis had continued for months, nothing to lead one to suspect the kidneys could be engaged—the symptoms pointing more to calculus than to kidney disease.

He took little in the way of nourishment during the time, but drank large quantities of fluids. On the third day after his admission he got up to the night-chair, and the attendant thinking he remained a long time on it, came to look after him, and found him sitting upright quite dead.

*Post mortem* showed death to be caused by syncope, due to fatty heart, which organ was found quite soft and friable. The liver was also greatly enlarged, and the kidneys presented the appearance you see here. They are enlarged to twice their natural size, bleed freely when cut, and



present a mottled appearance on the surface, with here and there cysts appearing through. The capsule, in parts, was inflamed and adherent, and the pelvis greatly enlarged and containing pus. The ureters were enlarged to twice or three times their natural size. The bladder, which was dilated and hypertrophied, showed the appearance which you see here. Its cavity presented the appearance you find in the ventricles of the heart, large carneæ columnæ having joined all through its substance, and here and there between them there is a tendency to pouching beginning to form in the walls—appearances well known to follow long-continued distension and vesical irritation. Its substance was quite friable and easily torn through on removal, and the middle lobe of the prostate is considerably enlarged—so much so that it was with difficulty a catheter could be introduced to empty it. The case is of interest in showing the changes just going on in the bladder, and how very grave and serious disease of the kidneys may be masked by the symptoms of vesical calculus.—*November 27, 1880.*

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#### DERMOID TUMOURS OF THE CORNEA.

DR. JOHN B. ROBERTS read a paper on dermoid tumours of the cornea before the Philadelphia County Medical Society, June 9, 1880, and presented specimens taken from a young bullock. The pathology of such growths is the same in the human subject. Each cornea was partially covered by a circular, somewhat elevated growth, closely studded with reddish hairs, such as were seen upon the surface of the animal. In one eye the tumour involved the sclerotic region, and then invaded about one-third of the cornea, while in the other eye the growth seemed to be limited almost exclusively to the corneal tissue, leaving about one-fourth of its surface free from involvement. The tumours were about the size of a ten-cent piece, and in one the continuity of the conjunctiva of the sclerotic with the surface of the tumour was easily seen. Dermoid tumours of the cornea in man are usually congenital, and are more prone to extend from the conjunctiva and sclerotic to the surface of the cornea than to be limited to the cornea itself. These tumours are seldom rapid in growth, are non-malignant, and may remain almost the same for years. The treatment of these cases in the human subject depends on the extent of cornea involved. If superficial, the growth may be pared off, as in pterygium. The cornea is frequently, however, involved to a considerable depth, and the anterior chamber may be opened in the attempt. In such cases, moreover, operation will be of little value, even if there remain sufficient corneal tissue to prevent perforation, because corneal opacity will remain at the cicatrix.—*Philadelphia Medical Times*, July 31, 1880.



## CLINICAL RECORDS.

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*Clinical Notes on Scarlatina.*<sup>a</sup> By FRANCIS CHARLES MACNALT, M.A.,  
M.D., M.Ch., Univ. Dubl.; Patterdale, Westmoreland.

THE initial symptoms of scarlatina may be of a very severe character—so much so that you may not be able to diagnose the disease. I was called to see a female child, aged twelve years, who lived in an isolated dwelling. Her mother said she had been to school the day before, and had taken cold by getting very wet going and returning, the distance being two miles each way. She was taken ill at breakfast, with vomiting and diarrhoea, and had grown gradually worse.

When I first saw the child she was in a state of muttering delirium; burning skin; dry tongue—brown down the centre; and her stools were passing involuntarily under her. She gradually sank, and died sixteen hours after first being sick. I confess I was at first at a loss to know how to designate this disease, but her brother being taken ill the following day with scarlatina soon confirmed me in an opinion as to its true nature. The father had been to a town fifteen miles off, and brought home a horse from a place where scarlatina had been in the house. The time which elapsed between the fetching home of the horse and the appearance of the disease in the first case was three days.

In May last I attended a family in which all the children (three boys and two girls) except the baby, who was four months old, were attacked with scarlatina, and I am glad to say they all recovered. Two of the three boys had simple scarlatina, and got quite well without any complication. The third boy had general dropsy, with suppression of urine. For this I ordered linseed poultices across his loins, and a mixture of bicarbonate of potassium, ammonio-citrate of iron, and digitalis, and he soon recovered. The two girls suffered very severely with their throats, and each had scarlatinal bubo (Trousseau). For these I poulticed their throats well, and when all the hardness had disappeared I lanced the buboes; I then stopped poulticing, and dressed them with carbolic oil, so that the pus was not allowed to bag anywhere. By this means the wounds healed nicely, and now, except on very close inspection, you cannot see any scar. In all these cases I ordered at once linseed poultices to the neck, and in the girls' cases I applied the strong liq. ferri perchloridi to the throat,

<sup>a</sup> Abstract from an Essay on Scarlatina, being a Thesis read for the Degree of Doctor of Medicine of the University of Dublin.

which had a very good effect. I gave internally chlorate of potassium with diaphoretics at first, and afterwards liquor ferri and glycerin, in combination with the chlorate of potassium. Wine did good service in the cases of the girls, who were for some time delirious. That the baby did not contract the disease I think is due to the fact that he was suckled, and I believe that in cases where the people affected are isolated, the disease is often communicated in the food and utensils that come from the patients' rooms.

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#### A NEW ADHESIVE MATERIAL.

AFTER an extensive trial of substitutes for adhesive plaster, Dr. Hewson has found a simple mixture of common glue, one part, and officinal (twenty-five per cent.) acetic acid, four parts, to be the best in every respect. As to the making of this preparation, all that is required is to make the glue perfectly liquid by melting it in a pot set in boiling water, care being taken not to let any water get into it. When the glue is thus made liquid, four parts of officinal acetic acid (twenty-five per cent.) is to be slowly mixed in one part of it. This done, the preparation is complete, saving the addition of a few drops of otto of roses to destroy the smell of the acid, as also of the glue. It should be put into a wide-mouthed bottle, and well stoppered by a long cork, which can always be removed by heating the neck of the bottle. In illustration of its value, Dr. Hewson refers to its use in maintaining the extension dressing for fracture of the thigh. This can be made by securing only seven inches on each side of the knee of the material (linen or cotton, cut two inches wide). This will, when dry, resist the weight of over fifty pounds attached to the extending cord, and such weight can be applied as soon as the dressing is completely adjusted. The application dries with quickness in proportion to the thinness of its application. Different materials—*e.g.*, muslin, gauze, bandage-cloth, &c., may be saturated with it. Where the precaution is taken to keep the liquid from the lips of the wound there is no sensation whatever from its drying on the skin. Its contact is soothing when applied to some eruptions of the skin, and as a means of retaining applications (as of zinc) to the parts, it is particularly serviceable.—*Boston Med. and Surg. Jour.*, Oct. 7, 1880.

# SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

## VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday  
January 1, 1881.*

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin, -	314,666	716	699	2	4	33	—	14	33	4	28·9
Belfast, -	182,082	516	389	—	1	4	1	18	16	12	27·8
Cork, -	91,965	163	239	—	32	7	2	9	13	4	33·8
Limerick, -	44,209	102	103	—	1	13	—	1	1	2	30·3
Derry, -	30,884	53	63	—	—	—	—	—	3	—	26·5
Waterford, -	30,626	50	73	—	8	5	—	—	1	3	31·0
Galway, -	19,692	29	50	—	—	—	—	—	—	1	33·0
Sligo, -	17,285	20	34	—	—	8	—	—	2	1	25·6

### Remarks.

The rate of mortality was high in all the towns, but for midwinter not inordinately so. This was owing to the prevalence of very mild weather in the first half of December. Towards the close of the period the mortality began to rise considerably. In twenty large English towns, including London, the death-rate was 20·5 per 1,000 of the population annually; in the sixteen principal town districts of Ireland it was much higher—namely, 28·2 per 1,000. It was in London 20·2, in Edinburgh 20·8, and in Glasgow 20·8. Omitting the deaths of persons admitted into public institutions from localities outside the registration district, the rate of mortality in the Dublin district was 28·2 per 1,000, and within the municipal boundary it was 29·8 per 1,000. Zymotic affections were credited with 121 deaths, compared with an average of 142·8 deaths in the corresponding period of the preceding ten years. Scarletina and fever were prevalent and fatal. Of the 33 deaths referred to the latter disease, 24 were ascribed to typhus, 6 to typhoid, and 3 to “simple continued fever.” Scarletina was widely diffused through the chief towns of Ireland, and measles was very fatal in Cork and Waterford. In Dublin the mortality from diseases of the breathing organs was moderate, in consequence of favourable weather.



The deaths were 138, compared with a ten-years' average of 210·9. They included 100 from bronchitis (average = 166·1), and 27 from pneumonia (average = 24·9). The epidemic of typhus fever was checked by the very open weather at the end of November and beginning of December. Towards the close of the four weeks, however, the disease was again spreading; and 51 cases were admitted to the principal hospitals in the week ending January 1, being 22 over the admissions for the preceding week, and 6 over the number for the week ending December 18. On January 1, 1881, the number of cases of epidemic diseases under treatment in the chief hospitals of Dublin were as follow—smallpox 6 cases, measles 7, scarlatina 32, typhus 163, typhoid 16, and pneumonia 10 cases.

#### METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of December, 1880.*

Mean Height of Barometer,	-	-	-	29·891 inches.
Maximal Height of Barometer (on 7th at 11 p.m.),	-	-	-	30·552 „
Minimal Height of Barometer (on 23rd at 9 p.m.),	-	-	-	29·097 „
Mean Dry-bulb Temperature,	-	-	-	42·7°.
Mean Wet-bulb Temperature,	-	-	-	41·1°.
Mean Dew-point Temperature,	-	-	-	39·1°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·239 inch.
Mean Humidity,	-	-	-	87·2 per cent.
Highest Temperature in Shade (on 6th),	-	-	-	55·5°.
Lowest Temperature in Shade (on 26th),	-	-	-	28·8°.
Lowest Temperature on Grass (Radiation) (on 26th),	-	-	-	24·7°.
Mean Amount of Cloud,	-	-	-	65·9 per cent.
Rainfall (on 16 days),	-	-	-	3·252 inches.
General Directions of Wind,	-	-	-	W., S.W., N.W.

#### Remarks.

The first half of this month was singularly mild and open, but the second half was cold and changeable. The mean temperature of the week ending Saturday, the 11th, was 50·5°, or about 11° above the average. At that time an anticyclone, with central barometrical readings between 30·6 inches and 30·7 inches, lay over the English Channel and France, while pressure was low off the west coast of Norway, and over the Atlantic between Scotland and Iceland; consequently fresh to strong S.W. winds were prevalent in the British Islands. There was but little rain, except at exposed places on the western coasts of Ireland and Scotland, and frost was almost entirely absent from the British and Irish stations. On the 14th the first of a series of very sudden and irregular changes in pressure began over the S.W. of Ireland. At 8 a.m. of Sunday, the 19th, the barometer was as low as 28·58 inches at Nairn, in the N.E. of Scotland. At the same time readings were 30·10 inches

or upwards along the north coast of Spain and across France to Lyons. Temperature was low in Scotland, Ireland, and part of England. In the N. and W. of France it was high. In Dublin a piercingly cold W. wind prevailed, and a few flakes of snow fell at intervals. On the morning of the 22nd a warm W. wind caused the thermometer to rise from  $42^{\circ}$  to  $53^{\circ}$  in Dublin in a few minutes, and in consequence a thick vapour fog, which had lasted all the morning, vanished as if by magic. Temperature gave way quickly on the 23rd and 24th, and on Christmas Day clear frosty weather was prevalent. At 10 p.m. of the 26th rain fell on the frozen ground, causing the phenomenon of "Glatteis" or "glazed frost." Next morning excessive cold prevailed locally in the N. and E. of Scotland, the thermometer marking  $10^{\circ}$  at Wick,  $15^{\circ}$  at Aberdeen, and  $18^{\circ}$  at Nairn, at 8 a.m. It was as high as  $60^{\circ}$  at Biarritz at the same time. In Dublin cold weather continued to the end of the month. Snow or sleet fell on the 14th, 18th, 19th, 28th, and 31st. Hail was observed on the 14th, 16th, 17th, and 18th. Solar halos were seen on the 21st and the 26th. A lunar halo and corona were seen on the evening of the 15th. The atmosphere was more or less foggy on the 2nd, 17th, 20th, 21st, 22nd, and 26th. The last phase of a total eclipse of the moon was seen between 4 30 and 5 p.m. of the 16th, and a partial eclipse of the sun was indistinctly seen at 1 55 p.m. of the 31st. A lunar rainbow appeared at midnight of the 22nd.

## RAINFALL IN 1880,

*At 40, Fitzwilliam-square, West, Dublin.*

Month	Total Depth	Greatest Fall in 24 Hours		Number of Days on which .01 or more fell
	Inches	Depth	Date	
January, - - -	·563	·155	16th	8
February, - - -	2·581	·599	7th	17
March, - - -	3·129	·924	2nd	16
April, - - -	1·832	·746	15th	20
May, - - -	·847	·242	31st	9
June, - - -	2·166	·339	7th	18
July, - - -	6·087	1·310	17th	24
August, - - -	1·401	·620	7th	10
September, - - -	2·061	·471	22nd	15
October, - - -	7·358	2·736	27th	15
November, - - -	3·235	·670	15th	20
December, - - -	3·252	·680	14th	16
Total, - - -	34·512	—	—	188

## PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

### PERITYPHLITIS.

DR. H. B. SANDS publishes a paper upon this subject in the *Annals of the Anatomical and Surgical Society of Brooklyn* for July, 1880. In this paper, while the author gives his hearty support to the plan of treating perityphlitic abscess by early incision, he lays special stress upon the fact that many severe cases tend to spontaneous recovery, and he calls attention to the necessity of carefully distinguishing whether a given case demands operative interference or not. The paper deals only with those cases of inflammation of the cæcum in which the disease is circumscribed, excluding those in which general peritonitis follows rapidly upon perforation of the appendix or cæcum, as these latter are beyond the reach of art, and therefore devoid of surgical interest. Twenty-six cases are cited, divided into four classes:—1. Cases terminating in resolution without evidence of suppuration (10 cases); 2. Cases of abscess terminating in spontaneous recovery (3 cases); 3. Cases of abscess treated by operation (11 cases); 4. Cases of abscess unopened and ending fatally (2 cases). Inasmuch as many persons believe that perityphlitis, when once established, must necessarily go on to the formation of abscess, Dr. Sands shows his diagnosis to have been carefully made out in the first group of cases, those without suppuration. In all, the following symptoms were present, namely:—Abdominal pain and tenderness, sometimes limited to, and always most marked in, the region of the cæcum; fever, the temperature being from 100° to 104°; and the presence of an indurated swelling distinguished by palpation in the iliac fossa or by digital exploration of the rectum. In all instances the tumour was deep-seated, immovable, and tender on pressure. In half the cases resolution began between the fifth and eighth days, and in only one case was it delayed beyond the fourteenth day. In some cases the tumour subsided so rapidly as to suggest that an abscess had been ruptured, although a careful examination of the urine and fæces failed to detect any blood or pus. In most cases, however, the subsidence of the tumour was gradual, and in one instance nearly five months elapsed before the disappearance was complete. So far as the early symptoms are concerned, the author finds nothing to distinguish the cases of this group from those which are destined to go on to suppuration; he, therefore, advises delay before giving a definite opinion. It is only when resolution is delayed to the tenth, twelfth, or fourteenth day, usually, that the question of surgical interference comes up. Rigor, sweating, high temperature and pulse,

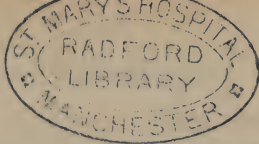
abdominal pain and tympanites, and an increasing extent, combined with diminishing firmness of the tumour, are the chief signs of the formation of pus; whereas, if resolution is to take place, toward the close of the second week the course of the disease is mild and favourable. In the eleven cases treated by operation, the knife never failed to penetrate an abscess except in one instance, and in one case only was there a fatal termination. The method of operation recommended is the division, cautiously, of the aponeurotic and muscular layers of the abdominal wall until the abscess is reached or the transversalis fascia is exposed. If, after the transversalis fascia is exposed, fluctuation is evident, the abscess may be opened; if there is no fluctuation, the fascia should be penetrated in various directions by means of a hypodermic syringe till the seat of the abscess is discovered, when a narrow bistoury may be entered alongside of the needle. An external incision of two inches will give room enough, and the wound should grow narrower as it goes down. This careful and cautious method is strongly recommended by Dr Sands in preference to that of plunging a bistoury at once into the abscess. The usual treatment is followed after operation. It is to be observed that the author has omitted one important means of diagnosis, which should be available at least in Dublin, and this omission prevents his paper from being complete. When it is a question whether *confined* pus is present in any given case, that is whether an abscess exists with no outlet, the question can be settled by a careful reckoning of the blood corpuscles by means of a hæmacytometer. If *confined pus* be present, the ratio of the white to the red discs will be greater than normal.—*St. Louis Courier of Med.*, Sept., 1880.

#### IODOFORM IN GYNÆCOLOGICAL PRACTICE.

DR. MARTIN has made use of iodoform in gynæcological practice in cases of various sorts. He uses it in the form of an ointment, a small quantity of oil of peppermint or Peruvian balsam being added to mitigate the odour. Tampons smeared with this ointment were left in the vagina from eight to twelve hours, and it was applied by inunction to the lower part of the abdomen and to other painful parts. The strength of the ointment is not stated. Two patients refused to have the treatment continued, on account of the disagreeable odour of the drug; others complained of it very much, but perceived such benefit that they preferred to keep on with its use, even though they had to seclude themselves for the time being; some very nervous women complained that it produced dizziness, which, however, was associated with pains in the head. The author divides his cases into three groups: 1. Those treated with iodoform from the beginning, without any other measures than ordinary attention to the bowels, &c., with weak saturnine or carbolised vaginal injections; 2. Those in which iodoform was substituted for the sorbe-



facients and astringents previously employed; 3. Those in which, along with the use of iodoform, other special treatment was continued—oak-bark baths and injections, extensive pencillings with tincture of iodine (of which he speaks very highly), scarifications, mud poultices, and the like. In some cases marked improvement took place, but this was not the uniform result, and in the majority of instances it did not occur, and the use of other measures was resumed. The best effects were obtained in cases of neuralgia at the climacteric period. Of seven cases treated with external applications of iodoform, two were entirely cured, and the pain was ameliorated in the others. Material benefit was produced in three cases of very obstinate eczema of the vulva. Five patients with carcinoma of the cervix were treated with iodoform. In two of them it was used after erosion and cauterisation with chloride of zinc paste; granulations quickly formed, the discharge diminished, and the pain was checked for a long time. In the three other cases the odour of the discharge was modified, but there was no change in its quantity or in the admixture of blood, and morphia could not long be dispensed with. The author was much pleased with the action of iodoform in a case of colpitis adhæsiva chronica, also in three cases of colpitis and cervical endometritis during pregnancy. He used the drug in three cases of uterine fibroids, but saw no effect. In eighteen cases of chronic endometritis, all associated with more or less metritis, and most of them with so-called erosions, temporary improvement took place in a few, but not a single cure. The other measures mentioned caused at least as much improvement, and in some instances more. How, he asks, can such small quantities of iodine bring about the absorption of the chronic hyperplasia found in confirmed metritis and endometritis? In thirty-nine cases the chronic metritis was associated with unilateral parametritis, with perimetritis, or with extensive peri- and parametritis. In two cases of this sort, where the exudation was small in amount, very gratifying improvement followed the use of iodoform, but most of them were only ameliorated for the time being, as may happen when any new remedy is tried, until the next menstruation, a cold, a jolt, or the like, brings back the old pain—a sign that the pelvic peritoneum has not yet wholly regained its integrity. Of thirty-one cases of chronic perimetritis and parametritis, a few soon showed great improvement, but most of them were not specially benefited, especially severe cases where the exudation was large. On the whole, the author considers iodoform a welcome addition to other measures, but generally of no greater value than the other means mentioned, particularly the Franzenbad ferruginous mud. Dr. Foster's experience with iodoform has led him to look upon it as very effective in the treatment of inflammatory pelvic deposits. It should be used in large quantity, and the tampons should be retained from one to three days.—*N. Y. Med. Journal*, October, 1880.



# THE DUBLIN JOURNAL

OF

## MEDICAL SCIENCE.

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MARCH 1, 1881.

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### PART I.

### ORIGINAL COMMUNICATIONS.

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ART. VIII.—*On the Action of the Posterior Crico-arytenoid Muscles.*<sup>a</sup>

By RICHARD A. HAYES, M.D., Univ. Dubl.; F.R.C.S.I.;  
Physician to Steevens' Hospital; late Clinical Assistant, Hospital  
for Diseases of the Throat and Chest, London.

THE action of the posterior crico-arytenoid muscles presents some points of interest to the anatomist and physiologist, as well as to those who make a special study of matters relating to laryngology.

The full action of these muscles, which take so important a part in the function of respiration, does not appear to be generally recognised, and as a case has lately come under my observation, which appears to me to furnish clinical illustration of what might otherwise be considered devoid of practical bearing respecting the action of these muscles, I offer a few observations on the subject.

In text-books of anatomy and physiology, recognised as standard works, the action of the posterior crico-arytenoid is described as a single one. In Quain's<sup>b</sup> *Anatomy* the following account is given:—"The posterior crico-arytenoids pull backwards the outer angles of the arytenoid cartilages, and thus draw asunder the posterior extremities of the vocal cords, and dilate the glottis to its fullest extent; they are likewise the elevators of the arytenoid cartilages."

Foster,<sup>c</sup> in his *Physiology*, says, under "Widening of the Glottis:"—"The crico-arytenoideus posticus, passing from the posterior surface of the cricoid cartilage behind the attachment of

<sup>a</sup> Read before the Dublin Biological Club. Nov. 23, 1880.

<sup>b</sup> Quain's *Elements of Anatomy*. London, 1876. Vol. II. P. 292.

<sup>c</sup> *Text-book of Physiology*. London, 1878. P. 529.

the lateral crico-arytenoideus, pulls back this outer angle, and so causing the processus vocalis to move outwards, widens the glottis."

Hermann<sup>a</sup> gives a similar description of the action of these muscles, and also makes the very doubtful assertion that the posterior edges of the cartilages are approximated by them, by which he explains the normal rhombic aperture of the glottis during deep inspiration. Other well-known works on anatomy and physiology give similar descriptions.

Ziemssen,<sup>b</sup> in the anatomico-physiological introduction to his article on "The Neuroses of the Larynx," says: "The pair of muscles most important to life are the posterior crico-arytenoids, inasmuch as they are the only openers of the glottis. By drawing on the muscular processes of the arytenoids, they rotate these cartilages upon their articular surfaces outwards and backwards, separate the vocal processes from one another, and open the chink of the glottis to its well-known rhomboidal form."

The foregoing extracts show clearly that the only action of these muscles usually recognised and taught is that of outward rotation of the vocal processes of the arytenoid cartilages.

It has lately been pointed out by Rühlmann<sup>c</sup> that the posterior crico-arytenoid muscle may be regarded as consisting of two parts, an outer thin and broad portion, the fibres of which run in an almost vertical direction, and an inner thicker portion, whose fibres pass in a direction approaching the horizontal at its innermost border.

I may here mention that Luschka<sup>d</sup> thus describes the nervous supply of the muscle:—"As the trunk of the inferior laryngeal nerve passes close to the posterior crico-arytenoid muscle two branches come off which slip beneath its external edge—one below, the other above the crico-arytenoid articulation." This arrangement of the nerves supplying the muscle is also noticed by Schech as normal, and I have myself observed it in a few dissections made some time since.

In accordance with this anatomical division of the muscles Rühlmann<sup>e</sup> has described them as possessing a double function, the

<sup>a</sup> Elements of Human Physiology. London, 1875. P. 306.

<sup>b</sup> Cyclopædia of the Practice of Medicine. Vol. VII. P. 918.

<sup>c</sup> Untersuchungen über das Zusammenwirken der Muskeln bei einigen häufiger vorkommenden Kehlkopfstellungen. Sitzb. der k. Akad. d. Wissenschaften. Wien. 1874. Bd. LXIX. 1-5 Heft.

<sup>d</sup> Kehlkopf des Menschen. Tübingen, 1871. P. 165.

<sup>e</sup> Loc. cit.

outer thin portion acting in a vertical direction, and thus causing the arytenoid cartilages to glide laterally from within outwards over the articulating surfaces of the cricoid, the inner thicker and more horizontal portion acting on the outer angle of the arytenoid draws it inwards, and thus rotates the processus vocalis outwards.<sup>a</sup>

Here, then, we have two distinct actions of these muscles on the arytenoids; these cartilages are drawn apart from each other by the outer portions of the muscles independently of any movements of rotation. This latter effect, which is usually described as the only function of the muscles, could not be in any way produced by the outer fibres, as is evident from their vertical direction, but is wholly performed by the inner part.

The fact that the movements of the arytenoids upon the cricoid are not limited to simple rotation has been recognised by other observers.

Ellis<sup>b</sup> thus describes them:—"From the flatness of the articular surfaces the arytenoid cartilage glides forwards and backwards, inwards and outwards; and if its horizontal movements are controlled by muscular action, it can be rotated around a vertical axis, the anterior spur being moved inwards and outwards. Obviously the state of the vocal cords will be changed by the movements of the cartilages—when the arytenoids glide in and out the cords will be approximated and separated; when from front to back these will be tightened and relaxed; and in rotation the cords will be moved away from and brought towards each other."

An examination of the articulating surfaces of the cricoid and arytenoid cartilages shows that they are formed so as to permit very free movements in addition to that of rotation; that of the arytenoid is concave and almost circular; it is much less in size than that of the cricoid. The latter is markedly oval, its length being double its breadth; it is doubly convex, from within outwards and from behind forwards.<sup>c</sup> It is this much larger articulating surface of the cricoid which allows the very free movements of the joint.

The position occupied by the arytenoid cartilages during deep inspiration as contrasted with that during phonation, as seen in the laryngoscopic mirror, shows clearly that the outward gliding of the arytenoids must take place.

<sup>a</sup> This view has been adopted by Oertel (*Ueber den laryngologischen Unterricht*. Leipzig, 1878) and the double action shown in his ingenious apparatus for demonstrating the action of the laryngeal muscles.

<sup>b</sup> Demonstrations of Anatomy. London, 1874. P. 189.

<sup>c</sup> In a specimen in the writer's possession a well-marked groove divides this surface into two equal parts.



In the adult male larynx during phonation the arytenoids are seen to be closely approximated, while in inspiration they are drawn apart a distance of at least one centimetre; in this movement the most posterior parts of the cartilages participate, so that if it were the result of a pure rotation the axis of rotation should occupy a position quite posterior to the larynx itself, in order to allow so wide a separation of the cartilages.

Any one at all familiar with the movements of the arytenoids will admit that in ordinary quiet inspiration they do not show any movement of rotation, the glottis appearing quite triangular in shape, the base being shorter or longer as the cartilages approach or recede from each other, and that the outward rotation of the vocal processes only becomes apparent during a deep inspiration, when the glottis assumes its fully expanded pentagonal<sup>a</sup> form.

The consideration of the function of the arytenoideus proprius furnishes further evidence that the action of the posterior crico-arytenoids is not confined to that of rotation. It is universally admitted that the arytenoideus draws together the arytenoid cartilages. In doing so it clearly does not act as the inward rotator of the cartilages, this being the special function of the lateral crico-arytenoids; and its position rendering such an action impossible, it must then approximate the cartilages previously drawn asunder by the outer fibres of the posterior crico-arytenoids.

In that rare affection—complete bilateral paralysis of the posterior crico-arytenoids—the glottis is permanently reduced to a mere slit, the only change taking place during inspiration being a drawing downwards of the free edges of the cords.

It has been observed in a very few cases of this paralysis that, instead of the glottis presenting the usual slit extending the whole of its length, this slit-like opening was confined to the anterior two-thirds—that is, the part corresponding to the “glottis vocalis,” but that the remaining portion of the glottis showed during deep inspiration a triangular opening, the apex of which was formed by the approximated vocal processes of the arytenoid cartilages, and its base by the interval normally found between the arytenoids in deep inspiration.

<sup>a</sup> I say “pentagonal” advisedly, as the term “rhomboidal” or lozenge-shaped,” usually applied, cannot be considered strictly accurate. The rima, when fully dilated, presents five easily recognisable sides; two formed by the fibrous cords meeting at an acute angle at their anterior insertion into the thyroid, two formed by the internal edges of the arytenoid cartilages, and the fifth—the inter-arytenoid fold—lying between the separated arytenoid cartilages.

In these cases the glottis during *deep inspiration* presents an appearance identical with that seen during attempted *phonation* in cases of bilateral paralysis of the thyro-arytenoids, complicated by paralysis of the arytenoideus proprius.

My friend, Dr. Semon, in whose practice one of these anomalous cases occurred, was, I believe, the first to offer an explanation (quoted by Dr. Morell Mackenzie<sup>a</sup>) of this peculiar condition.<sup>b</sup> After referring to Rühlmann's observations, he explained the condition by supposing that the *outer* portion of the muscle was paralysed, and that the subsequent paralytic contraction of the antagonist muscles produced the triangular opening.

The explanation of the mechanism of these cases given by me further on is a corrected form of the foregoing. It will be shown that it is the *inner* portion of the muscle which is paralysed and not the outer part, this latter still retaining its power of action.<sup>c</sup>

My attention was directed to this peculiar condition of the glottis by a case under my care some time since. The following are a few particulars of it:—

W. S., aged fifty-eight, was first seen by me 19th March, 1880. He complained of great difficulty in swallowing solids; fluids passed easily. He occasionally felt a dart of pain passing from his throat to the right ear, and suffered from very profuse secretion of saliva and mucus. Steady pressure on the cricoid cartilage caused slight pain, but no further information was obtained from a careful examination of his throat and neck externally. Heart and lungs were healthy.

I made a minute examination of the pharynx and larynx, and found the parts healthy with the exception of a slight laryngeal catarrh. The vocal cords moved naturally.

Cautious attempts to pass a small œsophageal sound failed, but I succeeded in passing a No. 12 gum elastic catheter. I did not persist in the use of instruments in consequence of the appearance of some streaks and small clots of blood in the expectoration.

I continued to see him at intervals of a few days, the only change in his condition being increasing dysphagia.

On 15th April laryngoscopic examination showed on the posterior pharyngeal wall, just above the left arytenoid cartilage, a yellowish-white patch about two millimetres in diameter, and close beside it a smaller spot not quite so distinct. The mucous membrane around them was red and swollen.

<sup>a</sup> Diseases of the Throat and Nose. London, 1880. Vol. I., p. 454.

<sup>b</sup> Trans. Clin. Soc. 1879. Vol. XII.

<sup>c</sup> On my drawing Dr. Semon's attention to the matter a short time since, he at once admitted the correctness of my view as to the portion of the muscle paralysed.

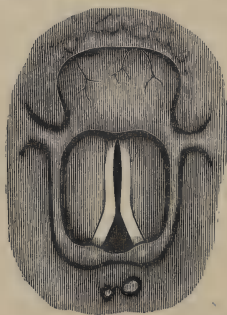
I also observed that during inspiration the anterior two-thirds of the cords did not separate, while the arytenoids moved apart widely posteriorly, leaving a triangular opening.

A few days subsequently there appeared just behind the arytenoids an elevated spot, the surface of which was bright red and granular, which I thought was probably the edge of an ulcer progressing upwards from the œsophagus. This proved to be the case, for in a few days it extended upwards until it reached the spots previously noted; they appeared to break down and join what was now an angry-looking ulcer with thick, elevated edges—its floor covered with greyish pus. It reached quite across the posterior pharyngeal wall, and extended a considerable height above the arytenoids, the mucous membrane covering which was a good deal inflamed and swollen. The diagnosis previously made of malignant disease was now placed beyond question. I may here remark that previous to this the patient had been ordered iodide of potassium in considerable quantity, in view of the possibility of syphilitic disease.

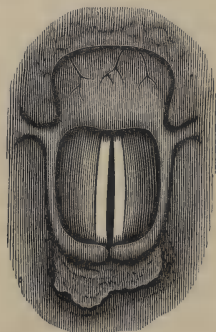
On May 6th I found that the posterior part of the glottis no longer showed the triangular opening during deep inspiration, as formerly, but that the condition was now that present in ordinary cases of complete paralysis of both abductors. The patient now also presented the symptoms peculiar to such cases—viz., severe attacks of inspiratory dyspnœa and a loud snoring noise during sleep, without any loss or alteration of voice.<sup>a</sup>

For relief of the dyspnœa I proposed tracheotomy, but his wife refused to allow it. Shortly afterwards S. began to complain of severe pains in the stomach, and had extensive hæmorrhages from the bowels. The pharyngeal ulceration continued to progress slowly, and he gradually sank, and died on 12th June. I was unfortunately unable to obtain a *post mortem*.

The successive positions of the cords during deep inspiration, with the respective dates beneath them, are shown in the woodcuts, which are from drawings made by me from the case.



15th April, 1880.



6th May, 1880.

<sup>a</sup> See a case reported by the writer in this Journal, Jan., 1880.

The appearances of the glottis in this case and the order of their occurrence seemed to demand for their explanation the acceptance of the views above expressed as to the actions of the posterior crico-arytenoid muscles on the arytenoid cartilages, which actions, if limited to simple rotation, must evidently be inadequate to account for the condition represented in the first of the two drawings, and in similar cases observed by others. The following appears to me to be the only method of explaining the matter:—

If we take the first position of the cords (15th of April) we find the arytenoid cartilages drawn apart at their bases, this would be effected by the external portions of the posterior crico-arytenoids; if the whole muscle were acting normally we should also find (during deep inspiration) each vocal process drawn outwards by the internal part of the muscle, but evidently this part was not acting, for the vocal processes, so far from being rotated outwards, met in the middle line.

The ulceration first appeared in the centre of the posterior pharyngeal wall, just behind those portions of the muscles which first became inactive, probably through inflammation, or perhaps destruction of their substance; as a consequence of the paralysis of these parts of the abductors, those muscles having an antagonistic action—viz., the lateral crico-arytenoids and internal thyro-arytenoids, underwent a paralytic<sup>a</sup> contraction, causing a permanent condition of inward rotation of the vocal processes.

Later on, as the ulceration progressed laterally, the hitherto healthy outer parts of the posterior crico-arytenoids also became injured and inactive, and, as a consequence of the paralytic contraction of their antagonist, the arytenoideus proprius, we find the arytenoids no longer separating posteriorly, even in deep inspiration, and the glottis presents the appearance peculiar to complete bilateral paralysis of the abductors.

This case appears to furnish conclusive evidence as to the true nature of the action of the posterior crico-arytenoids, as proved by the destruction of the function first of one and subsequently of the other portion of the muscles; for in the earlier stage of the case we clearly had the power of outward rotation abolished, while the movements of gliding in, to, and out from the middle line in phonation and inspiration respectively continued quite active until the parts of the muscles by which the outward gliding was produced became attacked by the disease.

<sup>a</sup> Ziemssen. Loc. cit. Vol. XI., p. 378.



But those cases are much more interesting in which one portion only of the muscle is paralysed, and there being at the same time no destructive processes going on in the neighbouring parts the paralysis must be referred to a lesion in some part of its course of the nerve supplying that portion of the muscle or to central disease.

In connexion with these cases the fact of there being two distinct nerve branches passing into the muscle seems to point to the existence of a certain divisibility of the complete action of the muscle, so that while in health both portions act in concert, yet, in case one part becomes from any cause inactive, the other can still retain its power of motion. Of course, the complete proof of this could be furnished only by the observation of a case in which the opposite condition to that already described existed—*i.e.*, paralysis of the outer portion only, when we should find during deep inspiration outward rotation of the vocal processes, while the arytenoid cartilages remained permanently drawn together posteriorly.

I would even go so far as to consider the universally recognised outward rotatory action of the muscles in question as occupying a secondary position, and am inclined to regard the outward drawing of the arytenoids as the usual and ordinary function of the abductors. In observing the movements of these cartilages in the living subject it will be found, as before remarked, that during ordinary quiet respiration the glottis is distinctly triangular in shape; and, further, that with each inspiration the cords may often be observed to move slightly further from the middle line, and to return towards it during expiration—these slight movements being brought about by the outer portions of the posterior crico-arytenoids and the arytenoideus proprius respectively. In this connexion these outer portions of the abductors may be considered as coming under the head of muscles of ordinary inspiration, while the inner portions which only come into play and act as external rotators of the cartilages during deep inspiration might be included amongst the muscles of extraordinary inspiration, since by means of the combined actions of both portions of the muscles the area of the rima is accommodated to the varying volumes of air passing through it at different periods of time to satisfy the demands of quiet or laboured respiration.

In conclusion, I think we may fairly define the action of the posterior crico-arytenoids as follows:—Firstly, a limited but still

distinct drawing of the arytenoid cartilages laterally outwards from the middle line, and, secondly, the arytenoids being held in that position, an outward rotation of the vocal processes in order that the glottis may be fully dilated.

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ART. IX.—*Thoughts arising from the perusal of Sir W. Jenner's latest Essay on Typhoid Fever.*<sup>a</sup> By HENRY KENNEDY, A.B., M.B.; Physician to Simpson's Hospital and the Whitworth Hospital, Drumcondra; formerly connected with Cork-street and Sir P. Dun's Hospitals.

A LITTLE more than a year since an essay on typhoid fever, by Sir William Jenner, appeared in nearly all the London periodicals of the time. This essay is a *résumé* of a large experience of the disease, and is a very able and well-digested address, and exhibits in a clear light the author's views on the subject. It is, however, one of such great moment, and appears to different minds in such varied aspects, that I have thought it would not be out of place to bring it forward once more; and the more so as there are some points of a general character which, in the consideration of the matter, seem to me to call for more attention than they have hitherto received. As I do not wish, however, to advance anything in a dogmatic spirit, I shall throw into the form of queries the several points to which I would ask attention; and, without further preface, will now proceed to do so. It is to be remembered that it is of general principles only I would speak here.

And, in the first place, has the constitution of individuals in whom typhoid fever occurs been sufficiently recognised?

I think not. For a long period I have had the impression, which of late years has become a conviction, that this type of fever occurs chiefly in persons who, if not of a strumous constitution, are closely allied to that state. This opinion has not been hastily taken up, nor, as far as I know, has it been specially advanced in any of the standard works of the day, and yet it appears to me that a number of facts can be advanced in strong corroboration of it. Thus the number of individuals suffering from typhoid fever who have a very fine skin and a high colour in their cheeks is very remarkable. I think, too, it will be observed that their frame, and particularly the chest, are not what is considered as robust. Of course I speak only of the majority of instances, for exceptions do occur, but I

<sup>a</sup> Read before the Medical Society of the King and Queen's College of Physicians in Ireland, Wednesday, February 2, 1881. [For the discussion on this paper, see p. 240.]

believe them to be rare. In keeping with this form of body I need scarcely remind you of the important part which hæmorrhages play in this type of fever. I admit that these hæmorrhages are more frequent at some periods than others, but this does not shake the fact that in typhoid fever bleeding in one form or another constitutes an important phase in the natural history of the affection. But, again, nebulae on the corneæ and chronic inflammation of the eyelids are frequently observed; and I have seen, again and again, marks of struma in the neck, which had evidently occurred in childhood. The point, too, of which I speak—that is, the close connexion between typhoid fever and the strumous diathesis—may be seen in a still more striking light. I have been asked to see a case of this fever where, on inquiry, it turned out that two years previously the patient had symptoms of phthisis, including spitting of blood, and I have had to treat typhoid in a patient whom I knew at the time to be labouring under well-marked tubercular phthisis. In this view of the question the similarity of the lesions which occur in tubercular phthisis and enteric fever must not be forgotten; to my eye they seem to be of the very closest.

In the last place, I may remind you of the great frequency of the lung affection which occurs in enteric fever—the form which is now known as catarrhal pneumonia, and which so often ends in one of the forms of phthisis. Indeed some late writers—and conspicuously amongst them Niemeyer—have advanced the opinion that pneumonia is the starting-point of all phthisis. This I cannot for a moment concede. All I allow here is that in enteric fever a kind of pneumonia occurs which is apt to run into one of the forms of phthisis.

This view of the nature of enteric fever—or, more strictly, of the nature of the constitution in which it occurs—is, I believe, of much moment to recognise; for, if correct, it requires very little consideration to show the important bearing it must exercise on the diagnosis, prognosis, and, above all, the treatment. It must, in fact, affect every point in connexion with this type of fever. Thus, keeping this point in our minds, the diagnosis is rendered so much the easier, for, if in a doubtful case we observe any signs, constitutional or otherwise, of the strumous diathesis, we may be the more assured that the fever with which we have to deal is of the enteric type. Need it be added that the number of cases which taxes our diagnostic skill is very considerable? One of our Fellows, Dr. Bernard, of Derry, read an able paper on this very

point at the commencement of the present Session. The same remarks, too, apply—but possibly with still greater force—to the question of prognosis, for precisely as the marks of the strumous constitution are well-marked or otherwise, ought our prognosis to be founded.<sup>a</sup> When I come to speak of the treatment of typhoid fever this view will be brought under notice again.<sup>b</sup>

Independent, however, of what has just been advanced, there is one aspect of this subject to which I would call special attention, and with which the present remarks have the closest connexion—I mean the way in which an attack of typhoid may begin. Thus, I have seen a number of cases where an attack of bronchitis—in some instances very acute—preceded the onset of the fever; and it was only after several days that the symptoms of enteric fever developed themselves, and sometimes very suddenly. It was curious, too, to observe in these cases that the commencement of the symptoms of the fever had the effect, or seemed to have the effect, of lessening the bronchitis. I saw one case in which it passed away entirely, and the enteric fever which followed was a very severe attack.

But, again, you are aware that many cases of typhoid fever are ushered in by gastric symptoms, often of a violent character. It is clearly to cases of this type that the term “gastro-enterite” has been applied, and it is worth noting that it is more common at some periods than others. Lastly, and in direct connexion with the point I am now speaking of, I would notice the occurrence of a mixed type of fever, such as has been recently seen in the Cork-street Hospital, and described by Drs. Moore and Harvey. When I ventured to make a similar statement several years since, much scepticism prevailed at the time on the point; and I am glad that, no matter how we may explain it, the type of fever which I myself described has again made its appearance. To myself it would have seemed very strange if it had not repeated itself, and I will be much mistaken, indeed, if in the future still more striking examples of it

<sup>a</sup> I would here direct attention to a valuable paper by Dr. Harley, of London, in which he speaks of what he calls “tubercular fever and its relation to enteric fever.” It will be found in the third volume of the St. Thomas’s Hospital Reports for 1873, and it contains the details and *post mortem* examinations of some twelve cases, all of which are of much interest. Though this paper runs in the same direction as my own observations, it does not go at all so far; and, besides, my own views had been advanced long previously.

<sup>b</sup> An interesting paper, too, by Surgeon-Major Jackson, was recently brought before our Association, in which he showed the very marked changes which climate exercises on the progress of typhoid fever.



be not described. All diseases exhibit themselves in what may be called cycles, but none more strikingly than fever.

But why, it may be asked here, do I revert to these facts?—that is, to a bronchitis taking precedence, as it were, of an attack of typhoid fever—to the marked implication at times of the stomach in the disease, and to the occurrence of a type of fever in which it becomes very difficult to say what type it is. My answer is, Such facts show us, in the first place, that typhoid fever is not the localised disease which many suppose it to be; and, secondly, that in dealing with it our views cannot be too enlarged. That man will surely be the greatest physician who has the widest knowledge of such facts as I have been stating, and which are nothing more or less than a knowledge of some of the facts which constitute the natural history of the affection. I say some; for, did time permit, there are many others to which I might advert. But I must hasten on.

In the second place, and in the closest connexion with what has just been spoken of, I would ask—Do we sufficiently recognise the differences which obtain in the morbid anatomy of typhoid fever? My impression is we do not; and yet a great deal of our success in the management of the affection will turn on the views we hold. It is true the morbid anatomy of enteric fever has been described, and with an accuracy which leaves nothing to be desired. It is not of this, however, I speak now, but of the variety in extent which the local lesions exhibit, and this in fatal cases. Thus it is certain that the fever may kill, and yet the local lesion be only sufficient to indicate the disease; or the local lesion may be confined to the ileo-cæcal valve; or the solitary glands may be affected, and Peyer's patches intact (Murchison); or there may be scarcely anything but violent congestion, of which an epidemic that occurred some six years since in this city afforded several examples, being attended by very early and fatal hæmorrhages, which seemed to arise as much from the colon as the ileum. And this leads me to speak of a phase of the disease which I consider requires a more distinct recognition than it has even yet got, though a well-known part of the affection—I mean the state of the colon, which in my own experience has been more constant than the standard works teach. Murchison states that *about* one-third of the cases of enteric fever exhibit lesions of the colon. I believe it is more common than this, as I have just stated. I also believe it is more common in some epidemics than others. I have seen as much

disease in the colon as in the ileum ; and, if my memory serves me rightly, a case is given by Murchison where the disease of the colon was more extensive than that in the ileum. It is not the place here to contrast the lesions of these two portions of the intestines, but simply to keep in mind the frequency with which lesions of the colon implicate those in the ileum. The diagnosis of this state can, I believe, be usually made, and it need scarcely be added that important deductions follow from such knowledge, bearing both on prognosis and treatment. One more remark I would make on this subject, which is, that when the disease in the ileum is of a very acute character the colon then usually escapes.

Lastly, and in direct connexion with the present part of my subject, I would advert here again to Harley's valuable paper, which proves that other fevers besides typhoid may implicate the lower portion of the ileum and neighbouring parts.

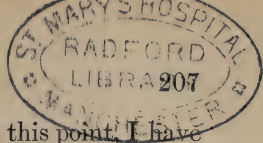
But what, it may be asked here, follows from noticing these several points ? My answer is, they explain many if not all the anomalies with which the subject is beset ; for, if we have every grade of morbid process, from the very slightest to the most severe, going on in the lower portion of the ileum and neighbouring parts, and all in direct connexion with the fever known as typhoid, I need scarcely say what an endless variety of symptoms these states must cause, and so render our diagnosis, and consequently our prognosis, at times at least so doubtful. One point only, as an illustration of what I am speaking of, I would mention here, but it is a very important point, and relates to the duration of the attack. In this, it need scarcely be observed, there is great variety ; and while some cases seem, as it were, to abort, there are others which literally run on to three months. The former of these—that is, the attacks which are of short duration—prove the most difficult of diagnosis, and have indeed led to the describing different types of fever, such as gastric, gastro-enterite, mucous, &c. Not long since Dr. Grimshaw read before this Society a paper in which some cases were detailed which were described as examples of mucous fever. Now, to my mind, one and all of these varieties, as well as the varied durations of the disease, are readily explained by keeping in mind the several morbid states to which your attention has been drawn. From this point of view, in fact, these several types of fever are but modifications of that state to which we now give the name of typhoid. Whether this view will strike others as of moment I know not ; but this I do know, it has in practice been

of the greatest moment—I was going to say comfort—to myself. It affords me a satisfactory reason why some of these fevers run their course in ten or twelve days, whilst others are prolonged to the tenth or twelfth week. I have seen very many of the shorter attacks of this fever which I used to consider and call gastric, but which a more enlarged experience has shown me belonged to the type of fever now known as “typhoid.” On the subject of the duration of this fever there will be occasion to speak again when referring to the treatment.

It was my intention to have made here some remarks on the diagnosis, relating, however, to only two points which have always seemed to me of paramount importance to keep in view when called to a case of typhoid fever. The limits, however, which I have assigned to myself in this paper prevent me from doing more than stating what the two points are. The first is the question—Has ulceration yet taken place? And the second—If so, to what extent do the ulcers exist? Answers might readily be given to these queries, but for the present I must hasten on.

And now I would, in the last place, ask your attention to the subject of treatment. And here I cannot but notice the prevailing idea which exists at present as to the position the physician holds when called to a case of typhoid fever. All the standard works would really lead one to suppose he had nothing to do but look on and let Nature take her course; and I have often heard parties say that the nurse was of far more consequence than the physician. In fact, ever since the appearance of the late Dr. Forbes' work on “Nature and Art in the Treatment of Disease,” the position of the physician seems to me to have been very equivocal (I am here speaking chiefly of fevers). Now, from all these views I must dissent, as I believe them to be injurious both to the profession and to the public. I hold that all fevers, including typhoid, are to be treated. I cannot but recollect we can lower the temperature, sustain the strength, allay pain, moderate vomiting and purging, and, I suppose I may add, command sleep; and yet, with these facts before us, we are told we do not treat or cure fevers. Surely there must be some mistake here. It may be granted, indeed, that art is not everything in the cure of disease. It would be absurd to argue this. But I do assert that from one point of view, at least, we can be said to cure diseases—fevers amongst the rest; and I believe the proper way of expressing the matter would be, that the physician treats, and, with the assistance of Nature,

By DR. HENRY KENNEDY.



cures disease. I may observe, too, as bearing on this point, I have not found, as a general rule, that Nature restores herself. Many and many a case have I seen—and I am sure I am only repeating here the experience of others—that have been either neglected or overlooked, and yet so far was Nature from curing them that they were either stationary or getting steadily worse. When, however, these cases were taken in hand they began from that moment to get well. The parties, in truth, were sick and needed a physician.

It is, I am aware, answered to this line of argument that the inflammations can be treated and cured, but that it is different with the essential fevers, the exact nature of which not being known they must take their course. Now, is this correct? And, above all, does it apply to the fever known as “typhoid”? To these questions I answer, without hesitation, in the negative. It will be admitted that in this fever we have tangible disease at least to contend with, and this it is which makes a very important difference between it and other fevers, and, as I contend for it, justifies us in directly treating the lesions present. But this remark leads me, in the last place, to make some general observations on the special treatment of typhoid fever, and which, I may add, are the result of a good many years’ observation. To enter at length into the treatment would here be quite out of place, and I shall only speak of those points which I believe to be all-important in the management of this fever, and which bring it most frequently to a satisfactory ending.

In the first place, I would observe there is no type of fever which appears to me to bear stimulants as well as typhoid. I am quite aware of the views held on this point by those who say none should be given, as well as those who, like the late Dr. Todd, gave them in very large quantities. Now, I am not going to speak of either of those views, but simply to state my conviction that the great majority of cases of this fever get on better by the use of stimulants than without them; and that by their agency the disease is shortened. My attention was forcibly drawn to this subject several years since, when what might fairly be called an epidemic of typhoid fever, amongst children, prevailed in the Cork-street Hospital. Many of these children lay, day after day, in their beds, without any appreciable change I could make out. At first I did not give any wine; but when I came to do so I could not fail to be struck with its effects—for it acted like magic. One or two ounces daily was all that was given. This naturally led me



to give it to adults; nor, after a good deal of experience, have I had any reason to alter this practice. Not that I rush to the use of stimulants because I have a case of typhoid to treat; but that their use, at some period, is an established point with me. With the views I now hold of the nature of the constitution of the patient, and to which attention has already been directed in an earlier part of these remarks, the use of stimulants comes in well; for I hold that, as a general rule, which has very few exceptions, the strumous diathesis is benefited by their use. In those cases in which it seems doubtful whether stimulants should be used my rule is to begin with a very small quantity, and I have often, in this way, literally ordered only a teaspoonful of wine at a time for each dose.

The food given to the patient during the attack is a matter of considerable moment. My own impression is that it may very readily be overdone, and I have stated as much many years since; and probably there is no single food about which greater mistakes are made than in the use of milk, which many suppose may be given *ad libitum*. I cannot but consider this as a very serious oversight, and it is a point which ever requires caution. It seems not to be recognised that many adults, even in rude health, will not bear milk, and to suppose that it will agree when fever is present is surely going further than any reason would justify. At any rate, whatever the reason be, certain it is milk frequently does harm—even given in what would be called moderate quantities and diluted, and I have myself seen many instances where its omission was at once followed by advantage. Whatever be my own individual opinions, however, I am very glad, on this particular point, to be able to quote the high authority of Sir W. Jenner, who—in the essay before referred to—dwells on this matter at some length, and goes the entire way in the views I myself hold. As he puts it, a pint of milk is equal to a mutton chop, and he urges, again and again, the need of great caution in the use of milk. More might be said on this point, but I must hasten on.

As to topical treatment to the abdomen, I would just remark that it does not seem to me to be of that decided character which very many cases of typhoid fever require. It is a very general custom to rest satisfied with the use of poultices and stupes, with or without turpentine or mustard. Now, I hesitate not to say that these do not, as a general rule, act so as to conquer the local

disease or diseases with which we have to contend; and my own practice has been to use more decided remedies. Thus, when the attack is ushered in by severe vomiting—and this during the first week is common—I do not hesitate to advise two leeches to be applied over the stomach; nor do I know any single remedy which more frequently affords relief. I have them applied too, though in exceptional cases, over the cæcum, and also with marked benefit. But whatever question may arise about the prudence of applying leeches, I have none whatever about the application of blisters, which, I feel confident, prevent the occurrence of mischief within. In speaking with friends on this subject I am always told that turpentine stupes had been used. But I must say that no reddening of the surface can in my mind compare with the effects of a real blister; and I believe precious time is often lost by carrying out what I must call half measures.

The same remarks apply, possibly with even greater force, to the treatment of the chest affections which complicate typhoid; and, unless I doubt my own senses, I cannot question the value of blisters—and these freely applied. I would not dwell on this point but that in Murchison's great work I do not find any allusion made to this practice in the treatment of typhoid fever.

The last point of practice to which I would ask your attention is in reference to the use of aperients. On this subject the extremes have been run into, just as in others, and some have advocated a very free use of medicines of this class, whilst others say they are not to be used at all. Now, I believe, with ordinary discretion, great and decided benefit follows their use; but I am now speaking more of the advanced stages of the disease. The fever is running on and on; there is still diarrhœa, and, it may be, some tympany. Under these circumstances an aperient often acts like a charm, and the one I am in the habit of using myself is the phosphate of soda. It very rarely disagrees, and it is mild in its action. It is worth noticing that, given at the stage I speak of, it frequently brings away a quantity of fæces, such as we could not, in any way, have been prepared for.<sup>a</sup>

<sup>a</sup> Two remedies, now much in vogue, I have not brought into the text at all; these are quinine and the modified bath. I believe both to be very doubtful remedies. When the fever is of such intensity as to threaten life the former frequently disagrees, being either thrown up or causing an increase of the diarrhœa; and even when it is retained, though the temperature may be lowered one or two degrees, the fever has not, as far as I have seen, otherwise improved. I am speaking, of course, of the medicine being given in large doses. The bath I believe to be still more objectionable. A

In making these remarks on treatment it will have been observed that they have been very unconnected, and numerous points have been, as it were, overlooked. All I wished to do was to speak of such points as I believe even yet admit of improvement, and these have been merely glanced at—not entered into at any length. Time would not have allowed of this.

As to the results of my experience and the practice founded on it, and carried out on the lines I have indicated, I may say they have been very satisfactory. I would not dare to say I have been more successful than others; but this much I may state—that my cases have been singularly free of relapses; and in this way the disease has been, as it were, shortened. My conviction is that, if treated from the first, typhoid fever will not run out as long as is commonly thought; but to attain this end it must be systematically treated. Let me, in conclusion, throw into a series of propositions the chief points brought forward in this paper:—

1. That the constitution in which typhoid fever occurs is very generally tainted with struma.

2. That a consideration of the morbid states found in the abdomen, not only in typhoid but in other fevers, accounts most satisfactorily for the varied phases which typhoid presents.

3. That as we have a distinct morbid lesion to contend with, our treatment should be regulated accordingly.

4. That wine, or other stimulant, should constitute a part of the treatment of typhoid fever.

5. That the use of milk in the treatment always demands special consideration.

6. That both leeches and blisters may be used with decided advantage, for either the abdominal or chest symptoms of typhoid.

7. That at an advanced stage of the disease aperients are frequently of much benefit.

person, even in health, will not find a bath of 95 degrees a bit too warm; and if it be then lowered some 20 degrees its effects are anything but pleasant, and may even cause a chill. Now, in the class of cases of which I am speaking, this is infinitely more likely to occur; and when we consider his general condition, his state of weakness, and the decided objections to his being moved at all, I think enough has been advanced to make us avoid the bath. For proof of what I say I refer my readers to the cases detailed in the Transactions of the Clinical Society of London.

ART. X.—*A Case of Paralysis of both Spinal Accessory Nerves, followed by Recovery.*<sup>a</sup> By ARTHUR WYNNE FOOT, M.D., Univ. Dubl.; F.K.Q.C.P.; Senior Physician to the Meath Hospital.

THE following case, which I extract from my note-book of “*Observationes Rariores*,” may possibly be worthy of record, as affording a clinical demonstration of facts experimentally established by Bischoff,<sup>b</sup> Longet,<sup>c</sup> Bernard,<sup>d</sup> and others :—

CASE.—At noon, on the 20th Oct., 1880, a little boy, eight years old, fell headforemost down a flight of stone steps leading to the playground of the school to which he went. He got up without assistance, was not stunned, cut, or bruised, and remained in school till it was over, at 3 p.m. He said nothing about the fall at the time, I suppose from fear of punishment. Next morning his mother brought him to hospital, perceiving something was wrong with him. As his symptoms were obscure, and the history of the fall was suppressed at the time, he was prescribed for as an out-patient, and no particular attention was paid to him. He was brought again to hospital the following morning, and admitted to my wards by the clinical clerk, who, at the time, had not formed any very definite opinion as to his ailment. When I saw him forty-eight hours had elapsed since the fall, and there was then incomplete motor paralysis of both legs and both arms; at every attempt to swallow, even his saliva, choking fits ensued, from the fluids entering the larynx; his respiration was wholly diaphragmatic; and his head was peculiarly loose on his neck, falling backwards, forwards, or to either side, when he was held up, just as the head of a corpse does when rigor mortis has vanished. He was quite unable to attempt to stand, nor could he raise himself in bed, or change his posture in any degree. Sensation was unaltered in his body and limbs; there was no paralysis of either bladder or rectum, nor any increase of reflex action. He complained bitterly of pain in his back and in his neck.

His mother's account of him was that he had always been a very delicate and irritable child; it was only within the last twelve months he had been anything like thriving; he had always been subject to headache, and had had a bad chest since he had the whooping-cough, when two months old.

It was plain that it would be most dangerous to persist in giving him

<sup>a</sup> Read before the Medical Society of the King and Queen's College of Physicians in Ireland, Wednesday, February 2, 1881. [For the discussion on this paper, see p. 243.]

<sup>b</sup> *Nervi Accessorii Willisii. Anatomia et Physiologia.* Darmstadii, 1832.

<sup>c</sup> *Anatomie et Physiologie du Système Nerveux.* Paris, 1842.

<sup>d</sup> *Leçons sur la Physiologie et la Pathologie du Système Nerveux.* Paris, 1858.



food by the mouth—even the nurse objected to giving him any liquid by the mouth, it was so apparent she might choke him. He said he could not swallow even his spittle, because it choked him. I watched him being given a few teaspoonfuls of milk in the most cautious manner. It appeared to go straight into the larynx, producing painful efforts to cough, during which he got black in the face, and asphyxia seemed imminent. After the rectum had been well cleared out by an enema of soap and water, an injection of beef-tea was given, and he was fed in this way for six days; he had three or four beef-tea enemata daily, and during the night a little wine was sometimes added to them.

No sooner had his sustenance been provided for by the rectal alimentation, than difficulties sprung up on the side of the respiratory organs. The only respiratory muscles which were in action were the diaphragm and those of the *alæ nasi*. The “nosework,” as the Germans call this respiratory action of the *portio dura* nerve, was very conspicuous.<sup>a</sup> The bronchial tubes were loaded with mucus, and the single, short, and ineffectual puffy expirations, when he attempted to cough, only served to give audible evidence of the large accumulation of mucus in the air-passages, while they failed completely to expel any of it. The *sternomastoid* muscles were of no assistance to him, as both were quite paralysed. His face was puffed, and of a violet tint, from congestion of the capillaries, with insufficiently aerated blood; the pupils were rather contracted, and the respirations shallow and frequent; his average respiration-rate during the first seven days (16 observations) was 41 per minute.

Different means were employed to assist in the unloading of the bronchial tubes. Emetic doses of *ipecacuanha* wine were given, but without effect, owing to the paralysis of the abdominal expiratory muscles. Four two-drachm doses of good *vinum ipecacuanhæ* were given, at intervals of fifteen minutes, but no attempt to vomit was induced. Though the doses were cautiously administered by an experienced nurse, still a good deal may have been lost, owing to the difficulty of deglutition, yet enough was probably received into the stomach to have made a child vomit under ordinary circumstances. The only effect apparent from the ounce of *ipecacuanha* wine was a copious diaphoresis, and one discharge from the bowels. Faradisation of the intercostal muscles was used, and inhalation of sulphuric ether. This latter seemed of more use than anything else.

For the first fortnight after his admission he required a special nurse to attend to him alone; his helpless restlessness was unceasing, his complaints being a constant round of—“Put in my hands” (when they fell out over the sides of his cot), “Turn me round,” “Settle me up,”

<sup>a</sup> It was the synchronism between the acts of dilatation of the nostrils and the movements of inspiration which first led Sir Charles Bell to regard the facial as a respiratory nerve.

"Put my feet in a cool place," "Uncross my legs," "Put me straight." When he was being sat up the nurse held a small pillow at the back of his head; if she removed her hand from it his head fell back till the skin on the front of his neck was tightly stretched, and if a hand was not kept against his forehead the head fell forwards till the chin met the chest. For the first two or three days he frequently had raving—fancied he saw people about him, and that he was falling out of bed. The delirium did not seem to arise from over-heated blood, for his mean average temperature for the first seven days (14 observations) was 99·6° F., and the highest point reached in that time was 102·8° F. He was always quite intelligent when spoken to. The delirium was more probably connected with the venosity of his blood from impeded oxidation, or with venous congestion of the membranes of the brain, because one leech behind the ear relieved him of violent headache, attended with fits of screaming. While we were leaving no stone unturned to save his life, his mother was with great difficulty dissuaded from her intention of taking him away "to die at home," as she said there was "nothing being done for him, because he was getting no medicine." As soon, therefore, as he was able to swallow ever so little, he was, for the sake of appearances, and to avoid the imputation of neglect, given minute doses of aqua camphoræ.

The first improvement appeared in the power of swallowing, and this was soon followed by return of tone to the sterno-mastoids and the trapezii muscles. His cough then got stronger; he began to be able to make a second expiratory effort instead of the single jerky puff he used; the leaden colour and the puffiness left his face, so that his complexion and appearance underwent a marked change; his face seemed to have got quite thin, though bright. He was able to put one hand to his mouth on the 30th October (ten days after the fall). On the 4th November he was able to raise his head off his pillow; on the 6th could drink as well as any other child, and stand with his hands holding on to a table or person, but not without some such support. On November 10th he was ordered a tonic of tinct. nuc. vom. and tinct. fer. perchl.; and he left hospital on November 15th, twenty-six days after the accident, able to breathe naturally and use his limbs, but still unsteady in rapid movements of the legs, and having some trouble in rising up off a low seat without assistance.

There was no great difficulty in making out that the spinal cord had sustained an injury, and it was also easy to localise the spot; and a diagnosis to that effect was written on his card the day he came under my observation. It was plainly between the third and the fifth, or perhaps sixth, cervical vertebræ. It should be below the third, as the phrenic nerve was uninjured; and it should be above the sixth, as the spinal accessory nerve was paralysed, which rises from the lateral tract

of the spinal cord as low down as the fifth or sixth cervical vertebra. The view I formed myself of the nature of the accident was, that as the boy pitched on his head, a sudden flexion of the neck occurred, with consequent compression of the spinal cord at the seat of flexion. Had he been older his neck would in all probability have been broken; but owing to the great elasticity of the spine in early life, fracture of the vertebræ is not an accident of boyhood. The temporary compression of the cord injured it sufficiently to interfere with its functions for a short time, and was fortunately repaired without myelitis or any other consequence which might have ensued setting in. In reference to the total absence of paralysis of sensation it appears a general rule that motor power is more subject to be damaged by itself than sensation. The explanation of this probably resides in the more superficial implantation of the motor roots of the spinal nerves in their appropriate column, whereas the posterior sensitive roots plunge suddenly into the interior of the cord. At all events, it may be deduced from these anatomical considerations that the column of motion which sends off the anterior roots is injured by violence inflicted generally on the cord more readily than the column of sensation which gives off the posterior roots.

The difficulty of swallowing, which was so prominent a symptom, and which necessitated the child being fed by the rectum, has light thrown on it by a consideration of the influence of the internal branch of the spinal accessory nerve upon deglutition. The internal or anastomotic branch is the branch which passes to the pneumogastric, and is composed principally, if not entirely, of the filaments of the spinal accessory which take their origin from the medulla oblongata. Bernard's elaborate researches upon the spinal accessory have shown that there are two ways in which deglutition is affected through this nerve:—1st. When the larynx is paralysed as a consequence of the extirpation of both nerves, the glottis cannot be completely closed to prevent the entrance of foreign bodies into the air passages. In rabbits particularly it was noted that particles of food penetrated the trachea and found their way into the lungs. 2nd. The spinal accessory furnishes numerous filaments to the *pharyngeal* branch of the pneumogastric, and, through this nerve, directly affects the muscles of deglutition; but the muscles animated in this way by the spinal accessory have a tendency to draw the lips of the glottis together, while they assist in passing the alimentary bolus into the œsophagus. When these important acts are wanting there is difficulty in the process of deglutition itself, as well as danger of the passage of alimentary particles into the larynx.<sup>a</sup>

It would have been desirable to have inspected the larynx with the laryngoscope, but the child's condition at the time was such that I did not think a useful examination could be satisfactorily made.

<sup>a</sup> Flint's Physiology. Vol. IV., p. 175.

When he left hospital their power had quite returned to the sterno-mastoids and trapezii, and he had full command over those muscles.

Independent of any clinical interest this case may present, it seems to me to have some physiological value as corroborative of Bernard's ingenious experiments on the influence of the spinal accessory nerves upon deglutition. Both accessory nerves were here paralysed as completely as if they had been paralysed by the difficult operation of section immediately below the foramen magnum by incisions through the occipito-altoid ligaments—an operation which is generally speedily fatal except in the most experienced hands; and this paralysis was here followed by effects similar to those observed in Bernard's experiments on animals, except that the voice was not lost, possibly because the injury was not sufficiently severe. Although I am unwilling to draw positive conclusions from lesions in the most delicate and complicated organ of the body by means so absurdly rough when compared with section in able hands, that, as Ludwig has forcibly put it, they may be compared to injuries of a watch by means of a pistol shot, yet I cannot avoid thinking that there was here a demonstration by accidental injury of a particular region of the spinal cord of a function of the spinal accessory nerves which has only recently been recognised—namely, their intimate concern with the movements of the larynx, and thereby with deglutition.

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#### EUCALYPTUS OIL AS AN ANTISEPTIC DRESSING.

SIEGEN, in the *Deutsche med. Wochenschrift*, reports his method of using the oil of eucalyptus as an antiseptic dressing. He greatly prefers gauze steeped in this oil, because it is less liable to produce irritations of an eczematous character. His mode of preparing gauze is as follows:—Three grammes of eucalyptus oil are dissolved in fifteen grammes of alcohol. To this solution he adds one hundred and fifty grammes of water. One metre of thoroughly-washed gauze is steeped in this solution until impregnated. The gauze as a dressing should be applied while still wet and covered with gutta-percha leaves. The dressing should remain three to five days. Even a five per cent. solution will not irritate the skin. This dressing was used successfully in a case of eczema, due to the irritant action of the oil of thymol.—*Medical Herald*.

S. W.



## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*Evolution, Expression, and Sensation, Cell Life, and Pathology.*

By JOHN CLELAND, M.D., F.R.S. Glasgow: James Maclehose.  
1881. 8vo. Pp. 158.

THIS volume consists of an Introduction and six Essays, all of which have, in one shape or other, been published before. We think it will be generally admitted that Professor Cleland has done well in collecting and publishing them in book form, for they deserve a better fate than to be buried under the mass of periodical literature which the journals of each year heap on those which went before.

In the first article on the Evolution of Organisation, it is contended that evolutions are definite; that "there is morphological design, and when in any line of development the design is completed the evolution ceases, although by the operation of environment or external circumstances variations may continue to occur, and degenerations of diverse kinds may take place. Such views demand for the universe a background or underlying element of spirit."

Further reasons for admitting the element of spirit in the universe are adduced in the second essay, on the Element of Symbolic Correlation in Expression. In this, to our mind the most attractive, division of the book the author puts definitely forward the following view as to the expression of the emotions:—"First, words indicating position and quantity represent ideas relating to both the physical and mental world; secondly, emotions expressible by such words are indicated by the attitudes, gestures, and movements of body expressed by the same words; thirdly, the same principle is applicable to movement of feature."

In the third article, on Vision, it is shown that natural selection will not account for the gradual evolution of the organs of vision in the animal series, but that in the simpler forms of eye we see the early stages of a morphological design, moving forward in definite directions to accomplish a mode of contact between the

external world and the consciousness of animals, the idea of which already existed.

The fourth article is on the Physical Relations of Consciousness and the Seat of Sensation: a Theory proposed. The difficulties in the way of the present generally-received theory of sensitive conduction and of sensation are forcibly pointed out, and a means of escape from them indicated. It is supposed that when the extremity of a nerve is stimulated the whole nerve and the portion of the brain with which it is in continuity enter into the impressed or active condition, which condition is not conducted from one part to another of the tract, leaving one region as it affects another, but, at all events for a time, exists simultaneously throughout, and that the consciousness extends from its special state so far as there is continuity of the impressed condition. "Let it be distinctly understood that I do not say that consciousness resides in the nerve-extremities, but only that when the nerves are in the active or impressed condition in their whole extent up to the brain, the consciousness is affected directly by the irritation applied to their extremities. The relation then of consciousness to the brain remains totally different from its relation to the nerve. The impressed condition of the cerebral corpuscles produces only excitement of the mind; the impressed condition of a peripheral nerve or its extremity continued up to the brain brings the consciousness into communication with the irritation applied."

In this essay, as in other parts of the book, Dr. Cleland states very decidedly his opinion that the hemispheres of the brain are organs whose function is the same in all parts—"that neither medicine nor surgery nor experiments on animals have shown any difference of function in the different parts of the hemispheres." We do not know whether in 1881 the author holds to this opinion, originally put forward in 1870. He does not anywhere disclaim it, and yet we hardly think it tenable at the present day.

The fifth essay on Cell Theories is in a certain sense a review on Stricker's article on cells in his Handbook and on Beale's well-known theories. Beginning with an interesting historical account of the views which have been held on the importance of the different parts of the cell, the prominence which is now attributed to the protoplasm beyond that given to either the cell wall or the nucleus is pointed out, but it is shown that the existence of life in masses of protoplasm is a very different thing to life being a property of protoplasm. Protoplasm is not a definite chemical

compound, and many simple organisms are rather to be classed with nuclei than with protoplasm around nuclei. Undifferentiated cells possess all the vital powers—irritability, contractibility, nutrition, and reproduction, as do many separate living organisms. But as there are many individuals who do not possess all these powers, so in the case of cells in the process of differentiation—one property becomes exalted while another is lost. The phenomena of development cannot be explained by the life of the tissues, but in addition we must recognise a larger nerve-life or formative principle common to the whole individual, and even a still larger life or series of developmental changes from a simple origin to a definite goal, and which alone explains the evolution of all animal forms in the history of the globe.

The last article is entitled *Truth, Pathology, and the Public*. It is an address delivered at the ceremony of graduation in the University of Glasgow last July. Truthfulness is shown to be an art, which must be practised in different ways according as we are dealing with scientific matter or with the affairs of practical life. What Dr. Cleland has to say on this subject is well worth reading, not only for its matter, but for the very charming way in which it is said. The concluding part of the address is devoted to the importance of the study of pathological anatomy. The injurious effect which is produced in the practitioner by never having his diagnosis confirmed, or his mistakes corrected by examination of his patients after death, is forcibly pointed out, and the suicidal action of the public in opposing pathological investigation exposed. We are glad to find the author agrees with a remark which we made some time ago in this *Journal*, when noticing a work on *Nervous Diseases* which boasted that its statistics were drawn, not from hundreds or thousands of cases, but from hundreds of thousands of cases—in other words, from the mortuary returns of the Registrar-General. We then pointed out the utter worthlessness of these returns, and showed how in the vast majority of instances the medical attendant was forced to certify that of which he had no accurate knowledge.

In conclusion, we recommend these essays of Professor Cleland in the warmest manner to all our readers. They abound with suggestive thoughts and original views, and we think that there are few who could read them without being made both wiser and better.

*Hygienic and Sanative Measures for Chronic Catarrhal Inflammation of the Nose, Throat, and Ears.* By THOMAS F. RUMBOLD, M.D., St. Louis, U.S. George O. Rumbold & Co. Crown 8vo. Pp. 166.

THE ever-varying climate of Ireland renders it one of the special habitats of catarrhal disease; and Irish physicians would, therefore, turn with interest to a work which professes to give the experiences of a catarrhal specialist of twenty years' standing, as the preface announces the author to be. The first section of the book contains ten short chapters devoted to hygienic and preventive measures—the author truly remarking that one cold predisposes to another, and that, by proper preventive hygiene, colds might be altogether obviated. In these chapters he discusses the present system of clothing both men and women, the ventilation and proper temperature of dayrooms and bedrooms, exercise, diet, and the use of stimulants—which latter topic he briefly disposes of by saying that they “should not be taken unless prescribed by a physician” (p. 61). There is nothing in these chapters that is not well known to every medical man and to most educated laymen, but there are many views which will hardly be accepted. He states (p. 60) that hay fever “is but a nervous complication of nasal catarrh, and a consequence of it,” whereas it is more generally viewed as an irritation of the respiratory passages, caused by the presence in the air of certain vegetable odours or of varieties of vegetable pollen. At p. 35 he strongly recommends the use of nightcaps in adults, and of caps both day and night for infants up to the eighteenth month. Now, nightcaps, although still common on the Continent, have in these countries greatly gone out of use. The practice, however, may depend on climatic considerations. He condemns (p. 33) the clothing of women, particularly the present minute size of fashionable hats, and there is no doubt that he is right; but, unless he can win over our social Juggernaut to his views, we fear his warnings will be in vain. He enters into rather minute particulars on this subject; but, strange to say, omits to censure those *décolleté* evening dresses which are such fertile sources of pulmonary disease. He very wisely, however, recommends the wearing next the person of a combined garment of cotton and woollen. We must, however, take exception to the propriety of this inner garment being changed in delicate persons at such distant periods as “three or more weeks” (p. 47), or being under any circumstances worn by night as well as



day (p. 48). In fact, the author relies too much upon what (in familiar language) is known as "coddling," and does not realise that, while plenty of warm overclothing is required by those in sedentary positions, it is much less called for during active exercise; and still less does he approve of our great national institution, the "daily cold tub." In his classical "Lectures on Surgery" Sir Astley Cooper points out how by its use he was able to walk, without fear of catarrh, in cold weather, through the courts of St. Thomas's Hospital in "silk stockings and light shoes"—this description being, of course, a prosopopeion on the part of the eminent baronet for going in rather light clothing. Dr. B. W. Richardson, in his "Diseases of Modern Life," is of the same opinion, and deprecates the use of "artificially-warmed water." We have found the cold bath well enough in the finer months of the year, but our experience is that in winter it is better to heat the water to 60° F., and that such a bath affords all the bracing effects of cold water with certain and quick reaction. Of course, even this bath is doubtful for delicate persons or those advanced in life, and out of the question in pulmonary delicacy. Our author (p. 127) rather deprecates baths, and says, with reference to their power of preventing catarrh, that it "is far from being true even in a majority of instances." He adds, however, a very salutary caution as to the necessity of a sufficient cooling process after the Turkish bath.

He now treats of sanative measures, beginning with the cleansing of the nasal and pharyngo-nasal passages in chronic catarrh, and this he accomplishes by salt and water thrown up the nostrils either with a sponge or with the hand. He disapproves of Weber's nasal douche, recommended by Dr. Thudicum, and founds his objections on an experiment in which he divided the head of a human subject longitudinally, replaced the septum narium with glass, and found that the fluid did not reach the upper half of the nasal cavity. He advocates instead his own "catheter nasal douche," but we cannot detect any material difference between this appliance and the well-known vulcanite nasal spray to be found in every surgery.

His next chapter, on the removal from the middle ear of the muco-purulent product of catarrhal inflammation of the tympanic cavity, is truly remarkable. We presume he means the variety of catarrh with free exudation, for of the other three varieties described by Kramer and others he does not make the least mention. Kramer cautiously medicates the middle ear by a Eustachian catheter,

introduced through the nose and then through the Eustachian tube. Our author more boldly washes out the middle ear by injecting a solution of sodium chloride at 98° into the external auditory meatus, and at p. 111 says:—"In order, therefore, to make the stream pass through the perforation in the drumhead and enter the middle ear, and not waste its force on the sides of the curved auditory canal, the patient should straighten this passage as much as possible;" and (p. 117)—"The rapidity with which the cleansing may be accomplished will depend on the size of the aperture through the drum." There is not one word to indicate that such an aperture in the drum of the ear is not the ordinary state of things, or the ordinary way of medicating the middle ear, and to Eustachian catheterisation for this purpose the author does not make the faintest allusion. He remarks, however, that this washing "can be overdone." To avoid the possibility of mistake we have perused this extraordinary chapter a second and even a third time. The meaning, however, is clear and plain, and is illustrated by nine anatomical and other drawings. How such views could, at this time of day, be put forward, is beyond our comprehension.

In the chapter on oil inunction the author gives a summary (the only really useful feature in the whole volume) of Sir James Simpson's paper on the "External Use of Oil," which was published in *The Edinburgh Medical Journal* of October, 1853. Sir James, noticing the absence of pulmonary consumption, and of scrofulous disease generally, in the operatives of certain wool factories who were constantly handling oil and breathing an oleaginous atmosphere, hit upon the happy idea of introducing oil into the system by dermic friction, in cases in which there was any difficulty in introducing it by the stomach. Our author correctly remarks that oleaginous dermic friction causes an unpleasant smell from the person, and proposes instead of oil to rub in vaselin, one of the solid residual products of the petroleum refining process. We have employed vaselin externally in skin disease, but whether it will as an inunctive replace cod-liver or olive oils is a point that clinical experiment can alone determine. As a chemist we would doubt it.

The author gives a chapter on acute cold in the head, and recommends gr. 10 of sulphate of quinine at night, followed by gr. 5 in the morning, and subsequently by a laxative pill. We ourselves suffered much from this annoying complaint, and completely got

over liability to it by means of a powder consisting of gr. 3 of acetate of morphia, well rubbed with ʒss. each of white bismuth and pulv. tragacanth. When the sneezing, the well-known harbinger of the coryza, comes on, this powder should be used as snuff in both nostrils until the bitter flavour is felt in the back of the pharynx. As often as the sneezing recurs it should again be employed, and after a few applications—often after a single one—the cure will be found complete.

So far we have considered the first Part; we now arrive at a fly-leaf entitled “Part II.; Therapeutic and Operative Measures,” on turning over which we find only a few blank pages, immediately followed by the index of the volume. This is truly surprising, and reminds us of a well-known occurrence in the life of the Great Frederick, who, wishing to try the capacity of a young chaplain, desired him to preach on a subject which would be handed to him as he entered the pulpit. The young divine assented, and received a piece of blank paper. He was equal to the occasion, however, and, remarking that the world was formed out of nothing, preached upon the Creation. We presume Dr. Rumbold has some such idea as to the formation of the views of his readers; and if he adds nothing to our knowledge of “Catarrhal Therapeutic and Operative Measures,” he at least effectually avoids the possibility of error. We would further point out that, whereas the title page, dedication, and contents, occupy from pp. 1 to 12 inclusive, the next page (the introduction) is numbered p. 25. Of this loss of substance we can offer no opinion; but, on the whole, incline to the belief that the volume will be read more by Dr. Rumbold’s clients and the public of St. Louis than by the medical profession on either side of the Atlantic.

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*The Irish Medical Directory for the Year 1881.* Dublin: Offices of *The Medical Press and Circular*. London: Baillière, Tindall, & Cox. 1881. 8vo. Pp. 642.

THIS annual publication is steadily making its way, and the comparative punctuality of its appearance last year and on the present occasion is calculated to increase its popularity not less than its usefulness. There are fewer alterations and additions in the present volume than in any of its predecessors—probably because the form of the “Directory,” having been gradually evolved, has now become stereotyped.

We have again to express an opinion that this work deserves the confidence and the support of the medical profession in Ireland. It does not necessarily clash with either the "Medical Register" or Messrs. Churchill's well-known "Medical Directory," and it contains a vast amount of special information which cannot be obtained elsewhere by the Poor Law Medical Officers and Medical Officers of Health of Ireland. The estimation in which we hold the "Irish Medical Directory" makes us all the more regret the occurrence in the present issue of a large number of printer's errors, and of several more serious misprints. It is quite evident that the "reader's" part has not been well done, and this is a point which should be carefully attended to in future.

*Contributions to the Experimental Pathology of Spirillum Fever.*

By H. VANDYKE CARTER, M.D. (Reprinted from Vol. LXIII. of the "Medico-Chirurgical Transactions"). London. 1880. Pp. 70.

In this paper Dr. Carter records the results of numerous experiments on the transmission of relapsing fever from men to animals, and from one animal to another. The animal used was an Indian monkey—*Macacus radiatus*—easy to be obtained in Bombay. Previous attempts to reproduce the fever by inoculation in pigeons, rabbits, and dogs had failed. The material used for inoculation was the blood, and in some cases the saliva. In the saliva there is, besides the spirillar contagium, some other poisonous principle, which is present in the saliva even of healthy persons, but is greatly intensified in fever. This poison modifies, or may even altogether overcome, the spirillar poison. The following are the conclusions of the paper, as given by the author:—

"1. Relapsing fever' is readily transmissible from man to a quadrumanous animal, and from one of these animals to another, by inoculation of the blood, and it then commonly assumes the form of a single febrile event of highly varied intensity, type, and duration. So far as evidence goes, the 'relapse' is much more incidental in the monkey than in man. The conditions of infection are multiple.

"2. In the comparative attack the incubation period is characterised towards its close by a non-febrile spirillar infection of the blood, and the same fact has been verified for the first apyretic interval of man. It therefore appears that all incubation periods are divisible into two stages of a prior non-specific and a later specific character respectively. The



duration of these periods, or even of their stages, bears no fixed proportion to the intensity of ensuing febrile phenomena.

"3. The relationship of spirillar blood-infection to pyrexia cannot hence be regarded as an immediate one, yet, in the monkey, fever was an invariable sequel to infection, beginning and being conterminous with, and in degree generally corresponding to, augmentation of the parasite in the blood. In milder degrees of infection, however, it is conceivable that the terminal development of pyrexia may be wanting, and hence the spirillum disease would become essentially definable as a *mycosis sanguinis prope cum febre*.

"4. Nothing definite has been elicited respecting contemporary pyrogenetic agencies of a specific character other than the spirilla. Such there may be, yet the tendency of my comparative observations was towards the inference that exceptions to the relationship indicated are explicable upon idiosyncrasy of subject or other complication, the non-specific causes of 'fever' being numerous."

For the many interesting details of the experiments, we must refer to the original, where the cases are all described in full, and are accompanied by temperature charts.

In the microscopic examination of the blood, many important points were noticed. The spirillum differs from that of tank water in the great variety of changes of shape which it undergoes during its movements. In the course of these it forms curved and twisted filaments, loops, knots, rings, &c., often losing its rigid spiral contour, which the tank spirochæte or spirilla never do. The spirillum of the saliva is larger, thicker, and more sluggish than that of the blood.

The spirilla disappear almost suddenly at crisis. That this disappearance is due to some active process of destruction is shown by the fact that in blood taken during the fever the parasites persist outside the body at a time when they have disappeared from the living blood in the patient. The spirilla continue to live and move long after the death of their host, and the cessation of their movements is no sign of their death, since it always occurs before they begin to grow under artificial culture. By artificial cultivation "the parasite of spirillum fever may be readily induced to multiply and grow into a delicate mycelioid network, which in favourable conditions is very luxuriant and striking. Sometimes spores seem to arise from this fructification, but I was never able to see the production of a second generation of free spiral organisms."

We consider this paper, as a contribution to experimental pathology, of very unusual value, and, as such, recommend it cordially to the notice of all our readers.

## PART III.

### HALF-YEARLY REPORTS.

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#### REPORT ON ANÆSTHETICS.

##### PART II.

By H. MACNAUGHTON JONES, M.D., F.R.C.S.I. & Ed.; Surgeon, Cork County Hospital, and Ophthalmic and Aural Hospital; Professor of Obstetrics and Gynecology, Queen's College, Cork.

WE quite agree in the main with the principle enunciated by Dr. Rottenstein—"on ne doit jamais pratiquer une opération douloureuse sans anesthésier." Many apparently trivial operations are exceedingly painful, and while we possess such anæsthetics as nitrous oxide and ether it is surely inhuman to withhold them from a patient if they are at hand. Absolute rules are not possible, as Dr. Rottenstein remarks—"En tout, il faut éviter l'exagération et chercher le juste milieu." Some patients bear pain much better than others, suffer from less shock, and under such circumstances, especially when they do not wish for an anæsthetic, we had far better not press its use. For purposes of diagnosis, when muscular relaxation is required, in delicate manipulations, in critical operations, even if not very painful, anæsthetics are indicated. Take, for example, the assistance we obtain in exploring the bladder for stone, removing a foreign body from the ear in children, or a calculus from the urethra, or the careful examination of an injured globe, the diagnosis of a fracture, the reduction of a dislocation, the detection of a phantom abdominal tumour, the division of fistulæ, the examination of joints and the detection of mimicry in affections of these, the operations of tracheotomy and removal of the tonsil in children, or staphyloraphy and at times tenotomy. In our essay on "Medical Responsibility in the Choice of Anæsthetics" (Lewis, London, 1877), we referred to the suggestion of Dr. Lauder Brunton as to the cause of sudden syncope from chloroform during the extraction of teeth. The same

remarks apply to the evulsion of a toe-nail for onychia. Dr. Brunton (*Brit. Med. Journal*, Dec. 4, 1875), having referred to the reasons adduced by the late Professor Syme why he had so few deaths from chloroform—viz., “first, we always use good chloroform; and, second, we always use enough of it”—proceeds to show how in reality many of the deaths attributed to chloroform are really due to shock. He quotes a case where Professor Miller having decided to operate, at Sir J. Simpson’s request, for the first time under chloroform, the bottle was accidentally broken; none was administered; the man died on the table. Had chloroform been given, death would assuredly be attributed to its effects. Dr. Playfair, in his “*Science and Practice of Midwifery*,” details the case of a lady—a large, stout woman, with feeble circulation—who insisted on having chloroform during instrumental delivery. Commencing the operation he noticed some suspicious appearances about the patient. He stopped the anæsthetic and delivered her without it. Just one month afterwards she died in the dentist’s chair under chloroform. Dr. Brunton instances deaths occurring suddenly under chloroform from removal of a portion of diseased bone from the hand, evulsion of a toe-nail, and extraction of teeth. He discusses the effect of shock in causing sudden stoppage of the heart, produced by an empty state of the abdominal veins, the secondary consequence of a relaxation dependent upon the atonic condition of the vasomotor nerves. Goltz, of Strasburg, showed this by his experiments on frogs, by suddenly striking the abdomen—the heart being at the time exposed. Stoppage of the heart and empty vessels are the coincidents of shock. The sensory nerves are the most potent factors in the causation of these phenomena. Their irritation can produce a reflex stoppage of the heart (Hering and Kratschmer’s experiments on rabbits)—a stoppage, however, which is not fatal if at the same time the arterioles are stimulated to contract through the fibres reaching them from the cerebral hemispheres, thus preventing venous collapse, the arterial pressure being sustained. The requisite provision is a supervising power on the side of the brain. Arrest the function of the hemispheres by chloroform, &c., and the blood-pressure is reduced, and the irritation of a sensory nerve becomes specially dangerous. This is what the little dose of chloroform just does, destroying the reflex action which maintains the tone in the vessels, while it has not yet reached the medulla and cerebral ganglia, allowing these latter to exert their reflex stoppage on the heart. The full dose prevents

all reflex action. From these facts it is obvious how the shock from a large sensory nerve like the fifth, while a patient is partially anæsthetised by chloroform, is especially dangerous.

The table published by Sansom of the period at which death took place and the character of the operation confirms this view of Dr. Brunton. In 109 cases death occurred in 50 per cent. before the full effects of the chloroform were manifest, and 88 out of 109 cases were for minor operations, as extraction of teeth. Looking now more particularly into the physiological action of chloroform, and the causes of death from this anæsthetic, we find ample evidence on which to arrive at a satisfactory conclusion. The experiments of Schiff as to the difference of anæsthesia by chloroform and ether; the observations of Carter (*Brit. Med. Journal*, Feb., 1867); the experiments of the English Chloroform Committee (*Med.-Chirurg. Trans.*, Vols. XLVII. and XLVIII.); those of Prof. Bowditch and C. S. Mimot (*Boston Med. and Surg. Journal*, May, 1874); the discovery of Glover, sustained by Gosselin (*Edin. Med. Journal*, 1842; *Archives Générales*, 1848), of the direct action of chloroform on the heart; the experiments of Harley on the action of chloroform on the blood, more particularly on the corpuscles (*Physiological Transactions*, 1865), worked also out by Böttcher (*Virchow's Archives*, Vol. XXXII.), and still further by Schmidt and Schweiger-Seidel; the conclusions of Dr. B. W. Richardson from experiments performed more especially on rabbits to ascertain the cause of death in chloroform narcosis; the researches of Budin and Coyne (*Archives de Physiologie*, No. 1, 1875) as to the state of the pupil during chloroform anæsthesia; also those of Schiff in the same direction; the conclusion of the Surgical Society of Paris (1853) on the report of M. Robert on the accidents produced by chloroform; the views of Devouilliers, Roux, Bouisson, Ricord, Broca, Verneuil, Perrin, and many other distinguished French investigators; the recent reports of the Scientific Grants Committee of the British Medical Association, composed of Drs. Joseph Coats, William Ramsay, and John M'Kendrick, a happy triumvirate of pathological, chemical, and physiological experts—all this evidence enables us to epitomise the views now held on the action of chloroform—views which the experience of practical surgeons and the records of deaths from this agent amply substantiate:—

1st. By chloroform the blood-pressure is “enormously reduced.” This fall in the blood-pressure causes an anæmic state of the brain



and respiratory centres, which tends to cause ultimately a cessation of respiratory movement and of the heart's action.

2nd. Chloroform produces a paralysis of the inhibitory centres after the primary stimulation.

3rd. Chloroform paralyses the vasomotor centres, thus accounting for the fall in pressure.

4th. Chloroform acts directly on the heart's muscle, destroying its contractile power, and arrests the heart's action suddenly.

5th. Arrest of respiration may precede stoppage of the heart, or *vice versâ*—dependent, it may be, upon the degree of concentration of the vapour. Death would appear to occur alike from asphyxia and from syncope, but much more frequently from the latter—in fact, it is doubtful, if the cause of death be asphyxia, whether we should not look to the method of administration to account for it. “Si l'on me démontrait l'asphyxie chez un malade mort pendant la chloroformisation, je dirais qu'elle est due à un mode vicieux d'administration” (M. Perrin). We may conclude that the great cause of death from chloroform is syncope—empty vessels—stoppage of the heart, sudden, and often impossible to foresee.

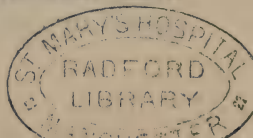
6th. Chloroform would appear from the researches of some to exercise a direct effect, physically and chemically, upon the blood, altering the size of the corpuscles (contraction), diminishing the amount of carbonic acid and increasing the oxygen; at the same time the quantity of carbonic acid in the exhaled air is increased.

7th. Chloroform abolishes conscious sensibility by its action on the perceptive centre, on the cerebral cells themselves (Rottenstein, “*Traité d'Anesthésie*,” p. 346), through their protoplasm (Claude Bernard, “*Leçons sur les Phénomènes de la Vie communs aux Animaux et aux Végétaux*,” 1878), carried thither by the blood, destroying the inherent irritability of the protoplasm, and thus bringing about the disappearance of the sensorial function of consciousness. This liberates the spinal cord to a power of independent action, during which time its reflex functions are exaggerated. Pain is not now felt, analgesia is produced. At the same time the motor brain-cells become affected, and now those of the cord and other tissue elements; finally, in complete anæsthesia, there is perfect muscular relaxation, and should the chloroform be further pressed and attack the medulla, respiration and circulation are arrested—death is the result. Reflex excitability would appear to be first exalted, and then a steady lowering to follow in the full stage of anæsthesia.

The theory that death may be the consequence of *reflex* stoppage of the heart through the peripheral irritation of the pulmonic nerve is supported by these views of Legroux (*Gazette hebdomadaire de Médecine et de Chirurgie*, March 15, 1878). They are more important in their bearing on the action of chloroform during parturition.

Lastly, regarding death from chloroform, it is right to point out—1st, that death frequently occurs after the first few inspirations; 2ndly, that the quantity sufficient to kill varies from a few drops upwards, but that in the majority of cases recorded not more than from one to three drachms have been sufficient to kill; 3rdly, that in a large proportion of cases there is no previous indication of danger—sudden cessation of the pulse and extreme pallor of the face, with alteration in the pupil, being the first indications, these being rapidly followed by an arrest in the respiration; 4thly, that though abnormal states of the heart—and principally fatty change—have been frequently found after death from chloroform, yet in numbers of other cases the signs are negative, the patients have been in good health, and the heart, lungs, and brain perfectly normal.

For some years past *The British Medical Journal*, through the pen of its brilliant editor, has been the foremost advocate for the substitution of ether for chloroform as a general anæsthetic. The vast mass of evidence accumulated in that journal even during the past year has tended more than anything else to direct the current of medical thought on the relative advantages and dangers of these two agents, and to change the practice of the profession throughout the United Kingdom in their employment. The part taken by Mr. Ernest Hart in this revolution is cordially recognised by Dr. Rottenstein. Referring to the transactions and expression of opinion of the Medico-Chirurgical Society of London, he says:—“Ce premier travail de la Société médico-chirurgicale de Londres a été le point de départ, d’une campagne organisée par un de nos confrères les plus distingués de Londres, M. Ernest Hart, en faveur de l’éther. Depuis cette époque, tous les cas de mort par le chloroform et l’éther ont été recueillis avec soin dans le *British Medical Journal*, que dirige M. Hart, et l’abondance des cas mortels attribués au chloroform a ouvert les yeux à la grande majorité des chirurgiens anglais qui ont renoncé à l’employer. Parmi ceux-ci nous citerons Sir James Paget dont l’autorité ne saurait être contestée, et qui emploie exclusivement l’éther, après s’être servir du chloroform pendant près de trente années.”



As to the state of the pupil during chloroform anæsthetisation, we believe it to be variable. According to MM. Budin and Coyne the pupil is at first dilated, then contracting, but remaining sensible to excitants, finally passing into a state of immobility and contractility during profound anæsthesia. Vomiting influences the pupil, causing dilatation. The mobility and size of the pupil, while bearing a certain relation to the degree of insensibility, cannot, M. Budin thinks, be taken as a guide for the surgeon. Schiff (*Imparzial*, 1874) found in animals that dilatation of the pupil is the best test of reaction. He ascertained that of the spinal cord only the posterior columns are sensitive; there is an absence of sensibility in the cerebellum, the anterior three-fourths of the cerebrum retaining some slight sensibility. Dilatation is effected through the cervical sympathetic—division of the sympathetic and medulla suspending it—while removal of the brain prevents all irritation of sensibility, yet the pupil still reacts to light (*vide* Turnbull, p. 95). Schiff differs from Budin as to the state of the pupil in early narcosis, believing it to be dilated. We should be sorry to take the state of the pupil as a guide for the commencement of a surgical operation, still more so to regard immobility of the pupil as an index. In our experience, in early narcosis the pupil is rather dilated, passing on later, during deeper anæsthesia, into a state of contraction, from which condition there is an easy transition into one of dilatation, partial and complete. Oscar Liebreich thinks that early dilatation is due to a want of purity in the chloroform, this latter being mixed with other atoms of chlorine—the bichloride series. Chloral produces extreme myosis (Schiff).

Both Drs. Rottenstein and Turnbull cite several examples of the mode of death from chloroform. It has fallen to our lot to see one death from this anæsthetic. At the close of the year 1875, ether not then being in use in the hospitals in this city, we brought before our local Society the advantages of ether in a paper on "Medical Responsibility in the Choice of Anæsthetics" (Lewis, London). In it we forcibly dwelt on the grave responsibility resting on medical men who still held to chloroform as an anæsthetic. We made an exception in the case of obstetric practice and of children. We then ascertained from 42 of the largest hospitals in the United Kingdom what the practice was as regards the anæsthetic employed and its mode of administration, as also the relative experience of the administrators in each hospital as to the use both

of chloroform and ether. We had for some time relinquished the use of chloroform in general surgery almost entirely, and bichloride of methylene in ophthalmic practice, for ether. This we did being alarmed at the repeated deaths from chloroform, and being satisfied that in the increased arterial pressure, the increased power of the heart, the anæsthetic action manifested first on the sensory and lastly on the motor centres of the cord and medulla, ether presented incomparable advantages in point of safety, whatever disadvantages in unpleasantness might attend its administration, though we endeavoured to prove that these were rather due to the anæsthetiser than to the ether. Of the 42 hospitals, chloroform alone was used in 14; ether alone in 12; chloroform and ether in 13; nitrous oxide gas and ether in 2; bichloride of methylene in 1. We have no doubt that if the practice in these same institutions were now ascertained, the great majority would be found to employ ether or nitrous oxide and ether almost exclusively.

It might appear strange that the first death from chloroform that occurred in this city should have been in a patient of our own. It happened thus. In February, 1880, a patient, aged fifty, was admitted into the South Infirmary with a luxation of the femur into the sciatic notch. The accident had occurred some weeks previously, and attempts had been made outside thrice under chloroform to reduce the dislocation unsuccessfully. We determined to attempt reduction by manipulation under an anæsthetic. We had not given chloroform for a few years in any case, save to children and in some operative obstetric cases. We somehow had the idea that we should have a better chance of reduction under chloroform than with ether; besides, the man mentioned the fact that outside chloroform had been thrice used. We directed the patient to get a warm bath the night before the operation, and he had a light breakfast early on the same morning. Some fresh chloroform (Duncan & Flockhart's) was obtained. The man's heart was examined previous to administration, and nothing detected abnormal. A few of the ribs were injured—one broken—by the injury, but the lung was not affected; otherwise he appeared a strong, healthy man. The pulleys and everything being in readiness, the man was brought into the theatre, which had a good fire lighted in it. The resident-surgeon proceeded to give the chloroform, as it generally was given in the South Infirmary, on a folded piece of lint. Some other medical men were present, who with our colleague,



Dr. Curtis, were standing at the side of the table awaiting the action of the anæsthetic. The pulse was felt at either side by two medical friends present. A little over a drachm was given, when he appeared to pass rapidly under the chloroform, having addressed some few remarks a minute before to the resident. We turned aside to take off our cuffs, up to this point watching the countenance of the patient, and we then went to the limb—Dr. Sandiford, who was administering the chloroform, saying that he was now ready. Just as we took the limb in our hands, Dr. Atkins, who had his hand on the pulse, noticed it fail, and the chloroform was withdrawn. On glancing at the man's face we saw that a death-like pallor overspread it, and that his appearance was most alarming. We at once went to his chin, drawing it well up, and had the body inverted. The pupils were greatly contracted. After a short time he gave a few gasps, Sylvester's method of respiration being practised at the same time. In the meantime a strong battery was brought. The pupils changed, and we hoped that he was coming to. Warmth was applied to the body, and mustard to the heart, but again he relapsed; and, despite of reinversion, faradisation in the course of the pneumogastric and over the heart, with continued artificial respiration, he sank. The coroner unfortunately had no *post mortem*. This, after a constant administration of anæsthetics for fourteen years, was the only fatal accident we have seen, though we have been on many occasions alarmed by the dangerous symptoms occurring with all anæsthetics. But this case was quite distinct in these respects—the absence of all warning, the terribly sudden character of the syncope; there was no struggling, not even marked delirium or excitement. He could not have inhaled two drachms. There could be no doubt of the purity of the chloroform in this case; it was ascertained after the accident. We regretted the fact much that no inquest was held. From that day to the present we have not given chloroform to an adult, though we have chloramyle and bichloride of methylene; we invariably employ ether. From henceforth we intend to use the combined method of Clover.

In dealing with the indication and contra-indication of anæsthetics, Dr. Rottenstein notices the rapidity with which infants and children succumb to their influence. More particularly is this true of chloroform and methylene. At the same time he remarks on the greater security there is in children to all anæsthetics, including chloroform. But while we regard chloroform as comparatively safe in infancy as compared with its use in adults,

still we must remember that death has occurred at all ages from this anæsthetic, from three years upwards (No. 157, Turnbull's table, three years; Crockett's case, five years, mixture of chloroform and ether, *American Journal of Medical Sciences*; No. 11, Turnbull's table, six years; Marjolin's case, seven and a-half years, "Traité d'Anesthésie," p. 384, Rottenstein). What strikes us as specially noteworthy and of practical importance in children is, the very rapid transition from the stage of excitement to that of insensibility and muscular relaxation—so much so that the former would appear to be absent. This requires close watchfulness on the part of the administrator, as also we think there is a greater tendency to vomiting in children, which must be guarded against. Bouisson and Rottenstein advise ether with children. Colton has given the nitrous oxide gas to children of all ages from two years upwards, and he noticed nothing to contra-indicate its use. So far as advanced life is concerned, it does not appear to increase the risk. In Turnbull's table of 160 cases, only 7 were over fifty years, 2 over sixty, and 1 over seventy. Men appear to be more liable to risk, a greater number of deaths occurring in the male sex, in the proportion of 2 to 1. But may not this in part be due to the greater liability of the latter to accidents, and the consequent shock which has proceeded operation, the greater severity of the operation, and also the greater number of administrations? Rottenstein says, "Toute maladie organique du cœur ou du poumon constitue une contre-indication à l'emploi de l'anesthésie."

Unquestionably chronic alcoholism is a most unfavourable condition under which to administer anæsthetics of any kind—there is greater excitement, greater struggling, more lividity, increased tendency to stertor, as well as difficulty in maintaining the anæsthetic state. This we found in a marked manner when we were in the habit of administering bichloride of methylene to men in operations on the eye. From 1868 we were constantly in the habit of administering bichloride of methylene in eye operations, and for other operations of short duration. We gave it on a sponge, in a conical gauze bag, about five inches in length, lined with flannel. Given thus, the rapidity of its action was remarkable; generally in from two to three minutes anæsthesia was complete (tested by the conjunctiva), and, as a rule, little sickness followed. We found that with children it required great care, affecting some with extraordinary rapidity, and in some cases causing dangerous syncope,

more so than with chloroform. Old inebriates resisted its action. Of late years we always give it with a Junker's apparatus, as indeed we believe this to be also the safest method, if Mr. Clover's apparatus be not at hand, of administering chloroform. I generally commenced with 60 drops of bichloride, and added another 60 at the expiration of the second minute when administering bichloride in the gauze inhaler (Mayer and Meltzer). This cone of gauze was useful also for giving chloroform to children. In 1872 we witnessed the first operation performed anæsthetically under ether; it was given at Moorfields Hospital by Dr. Joy Jeffries, with a towel rolled into the form of a cone, and the ether was poured into this in quantities of about half an ounce at a time, the cone being so applied to the patient's face as to exclude all air. The first struggling efforts were forcibly controlled, and soon insensibility ensued. We have before referred to the most important differences in the action of chloroform and ether, the two most important and vital of these being—1st, the preservation of the motor functions of the medulla and cord after the early abolition of the sensory; 2nd, the stimulating effects of ether on the heart, and hence the absence of the syncope of chloroform. The relative mortality from chloroform and other anæsthetics Dr. Rottenstein gives as follows, from Prof. Andrews (*Chicago Medical Examiner*), of 200·893 cases:—Sulphuric ether, 1 in 23·204 administrations; bichloride of methylene, 1 in 75·000; nitrous oxide gas, 0 in 75·000; mixture of chloroform and ether, 1 in 5,588; chloroform, 1 in 2,733. This table speaks for itself. Dr. Rottenstein reduces (p. 386) the 13 cases collected by Kappeler—an ardent advocate of chloroform—to 4 well-authenticated accidents from the effects of the ether alone. Compression of the carotid in an apoplectic patient, aged eighty-four, death occurring two or three hours after administration, with lung complications present—mixture of amyl and ether; 9 cases in which the patients were asphyxiated with blood and vomited matters, and 2 cases of death from surgical shock, complete the 13 cases of Kappeler. Taking Dr. Andrews' statistics and Dr. Richardson's, we obtain, up to 1872, a mortality of 4 in 92·815, or 1 in 23·204. Dr. Turnbull adds 5 cases to those collected by Dr. C. Dawson, of Leeds, as having occurred from 1873 to 1878, making a total of 18 cases in six years. But in one of these death did not occur for two days; there was a continuance of the stupor after the ether, which culminated in convulsive seizures, death supervening forty hours after the operation (removal of a cancerous submaxillary

gland). In two cases bichloride of methylene was mixed with or substituted for the ether; in another the ether was not pure; in one the trachea was filled with blood; in two others there existed previous pulmonary trouble. In the administration of the ether to those patients in which there was nothing save it to account for death, various inhalers were used—sponge in felt cone, cones of lint covered with oiled silk, cone of spongiopiline, towel, Ormsby's inhaler, modified Clover's, leather case with valves. In many the quantity is not accurately given—half an ounce, one ounce, inhalations during one minute and five minutes; in one case only three inhalations. The time between the commencement of the alarm and death is also not accurately stated—from a few minutes to half an hour. The lungs in most of the cases were congested or engorged with blood in parts; a clot of blood was found in one case in the trachea; the right side of the heart in these cases contained dark fluid blood, the left side being empty; in two the heart was flaccid and empty. Dr. Dawson draws the conclusion that death occurred in these cases from asphyxia—not from any special property of the ether. He attributes the asphyxia to the intense cold produced by the ether; this cold, he thinks, is the result of the passage back of the ether from the fluid state in which it is contained in the blood of the lung capillaries to a state of vapour, when it quickly re-absorbs the heat given off in its conversion into fluid on entering the blood; if the air then entering the lungs be cold, as in a cold room, the sudden extraction of heat from the lung arterioles will cause an extreme degree of contraction, which obstruction, if the heart be not endowed with a great margin of strength, must result in asphyxia.

Dr. Turnbull does not agree in these conclusions of Dr. Dawson. He rather attributes the asphyxia to the combined effects of the action of ether on the nerve centres and the filling of the lungs and trachea (when there is little residual air in the lungs) with ether vapour, especially if the apparatus be air-tight, or be rendered so by the condensation of moist air. One practical conclusion may be drawn from the theory of Dr. Dawson; we have already referred to it—have the apartment properly warmed in which ether is administered. After considerable experience of ether administration, we quite agree with Dr. Allis that the secret is to give the ether vapour without permitting the patient to have *fresh* air, *while we secure the inhalation of a certain amount of air mixed with the ether vapour*—"air saturated as much as possible



with ether." The respiration and the countenance are the two important indicators of danger. Immediate removal of the inhaler and elevation of the jaw should be the first step if we are *doubtful* of the condition of the patient. In giving ether it is of great advantage to begin by gradually increasing the quantity of ether vapour; to begin gently, but firmly; reassuring the patient; permitting no conversation on the part of bystanders; producing complete anæsthesia before commencing the operation; avoiding vomiting by administration on a completely empty stomach. Two cases of curious mental disturbance have followed the administration of ether by us. In one, a young farmer (in whose family there was insanity), operated on, under ether, for an iridectomy, became violently insane, had to be controlled, and finally removed to a lunatic asylum. In another—a patient (a labourer), also operated on for iridectomy—dementia set in, with delusions, which lasted some time; desire to take off his clothes; erotic tendencies; wandering about at night naked in the ward, &c.—so as that he had to be removed from hospital. In the case of a young lady recently anæsthetised by ether for an exploration of the bladder, in whom there was an old spinal affection, with hysterical tendency, the patient remained for about four hours in a condition much like catalepsy—mouth rigidly closed, eyes shut, breathing naturally, occasionally bursting into tears, lying in any position in which she was placed. She did not quite recover until the following day.

If we turn to the table of deaths from chloroform, contained in Dr. Turnbull's work, it affords, we submit, only too fearful evidence of the danger of chloroform. From 1869 to 1879 he, with the assistance of his son, Dr. Charles Turnbull, and Dr. H. Sterling, has collected the particulars of 160 deaths from chloroform. When these are added to the 210 cases reported by him up to 1869, we get, as he justly remarks, the "ghastly sum total, reported and fully authenticated, of 370." The table, complete as Dr. Turnbull has endeavoured to make it, is wanting in many most important details, both as regards the quantity given, the symptoms indicating danger, the cause of death, and the method of administration. In fact, these tables are of little value, save to prove the one broad fact—the danger of chloroform anæsthesia. Dr. Turnbull draws these conclusions from this last table of 160 deaths:—(1) Temperature (time of year made little difference); (2) male mortality was largely in excess of female (70 to 29);

(3) age exerts a great influence : 56 cases were over 21 years ; under this age, 9 ; (4) the severities of the operation had little to say to the fatal issue, a great number of deaths occurred in trifling operations (14 teeth extractions), from the passage of a catheter to the amputation of a finger ; (5) 24 (recorded) cases died before, 61 during, and 10 after the operation ; (6) the quantity varied from a few drops to half an ounce ; the greater proportion received from half an ounce to an ounce ; (7) the most noticeable condition of the patient was the *habitual employment* of chloroform ; next the coincidence of intemperate habits ; but in the great majority there was no departure from the normal state, and they were perfectly healthy up to the moment of administration ; (8) chloroform gives but little warning ; death may occur at any moment from the first inspiration (Schiff). Death in one of the cases occurred in one second. Several died in from one minute and a half to fifteen minutes.

The Scientific Grants Committee of the British Medical Association have reported most favourably on the relative advantages of ethidene (dichloride) as compared with chloroform. Like chloroform it reduces the blood-pressure—thus differing from ether—but not in the rapid manner in which chloroform does ; not by “ sudden and unexpected depressions,” but regularly. It does not “ compromise the heart, as chloroform does.” Under the use of ethidene on no single occasion was there arrest either of the heart or respiration. It is in a very high degree safer than chloroform. The result of the administration to patients of all ages has been satisfactory. It is more agreeable to patients, and produces less excitement, than chloroform (*Brit. Med. Jour.*, June 21, 1879). Mr. Clover’s experience, which is considerable, with ethidene, is confirmatory of this report (*Brit. Med. Jour.*, May 1, 1880). It is difficult, he says, to procure it pure—it is contaminated with Dutch liquid, which is dangerous. One death has occurred (Clover) from its administration, in which fatty degeneration was detected *post mortem* (*Journal of Dental Science*, 1880).

“ It appears that ethidene was first employed as an anæsthetic by Dr. Snow. He administered it in fifteen cases, with good results. (See *Snow on Chloroform, &c.*, last paper, published in 1858.) In 1870 it was used by Liebreich and Langenbeck in Berlin (*Berlin. klin. Wochenschrift*, Nos. 31 and 33, 1870, p. 401). In 1871 two papers appeared—one by Sauer, in the *Pharm. Centralblatt*, Vol. XIV., p. 140, and the other by Steffen, in *Deutsche Klinik*, No. 44, p. 398. Sauer mentions one

case of death in a patient suffering from heart-disease. In thirty-three cases, two vomited, and two suffered from nausea and headache. In 1872 Steffen publishes another paper in the same journal, p. 358, in which he gives details regarding twenty cases, and he states that the results were satisfactory. (See, also, *Jahresb. der Medicin*, 1870, 1871, and 1872, where abstracts are given.) Snow states that the difficulty in obtaining ethidene pure may prevent its general use. That difficulty is now removed; and there is little doubt that, if required, ethidene may be made in a state of purity and at a moderate cost.”<sup>a</sup>—*Quoted from Report of Committee.*

Chloral (Justus Liebig, 1831, “Action of Chlorine on Alcohol”—hence its name), as an anæsthetic, requires a word at our hands. Its change, with alkalies and alkaline carbonates, into chloroform and formic acid gave Liebreich the idea of its therapeutic employment for the production of chloroform in the system. Experiments appeared to confirm his view. Personne adopted it, while Gubler, Demarquay, and Claude Bernard denied that the effect produced was that of a pure anæsthetic. It is said that the formic acid is eliminated as formic acid or a formiate. The chloral eruption noticed on the skin, they thought, was due to this elimination, while Claude Bernard recognised in it the action of chloral on the vasomotor nerves. In 1872 Oré recommended the injection of chloral into the veins as an antidote for strychnia, and in 1874 pushed this subcutaneous method to the removal of tumours, ovariotomy, &c. He injected 12 grammes. This method was discussed in the Academy of Medicine. Vulpian, Colin, and Cruveilhier opposed it. Special effects on the kidneys were noticed. Hematuria, anuria, thrombus, and syncope, were cited as consequences. Experience sufficiently teaches every practitioner the uncertain effects of hydrate of chloral, when given by the mouth, to make anyone extremely loath to adopt such a means of inducing anæsthesia. As a substitute for chloroform in obstetric practice, also in tetanus, hydrate of chloral—given by the mouth, or, better still, by the rectum—is a most valuable remedy; may we not say indispensable? The method of anæsthetisation known as Bonwell’s (Turnbull, p. 260), by rapid respiration, is likely to excite interest.

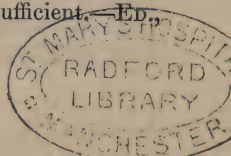
<sup>a</sup> The few occasions (children and adults) on which we have given ethidene have impressed us most favourably with its action—hardly any excitement, rapidity of action, absence of all signs of syncope, and in one case considerable increase in strength of heart’s pulsation and throbbing of carotid vessels, no sickness, and speedy recovery. It was given with Junker’s apparatus.

In from two to three minutes a certain degree of blunting of the sentient nerves is produced; dizziness and confusion is caused. The effects of ether, nitrous oxide, or chloroform are accelerated by previous rapid respiration on the part of the patient (Hewson, *Philadelphia Medical Times*, March 4th, 1876).

[To be concluded.]

#### PREVENTION OF BROMIC ACNE.

DR. FAIRBAIRN, of Brooklyn, N. Y., writes:—"The digestive disorder and annoying and disfiguring eruption which result from taking the bromides in large doses for a length of time, are serious disadvantages connected with the administration of these salts. A remedy which will prevent the bad effects of a medicine, and at the same time will rather aid than detract from its good effects, is certainly a valuable one. I think in this case we have such a remedy in cod-liver oil. A young lady, suffering from epilepsy, has been under my care for the past five months, who has taken bromide of potassium in large doses for nearly a year, and by this remedy cod-liver oil has warded off the above troublesome results. The mode of taking it was this—brom. potas., 3 ss., was taken thrice daily after eating; this was followed one hour after each dose by ol. morrhuae, 3 ss. When first attacked by the malady she had eight convulsions in the twenty-four hours. She began the bromide in 3 ss. doses, but was compelled to stop it on account of the gastric derangement. A friend recommended the cod-liver oil. She resumed the bromide, adding the oil, and has taken it without further trouble since. The eruption, before profuse, disappeared under this management. The disease has been well controlled, only four convulsions having occurred in the past seven months. I doubt not that the cod-liver oil has had its share in the direct benefit done to the nervous system, besides affording a protection from the irritating salt to the coats of the stomach. In summing up the good effects of the oil, I find:—1st. Absence of the digestive disorders; 2nd. Absence of the acne eruption; 3rd. That the anæmia, usually found in persons taking this medicine continually, is far from being marked; 4th. The body is better nourished, and appetite unimpaired. I have made trial of this treatment in other cases with similar good results."—*N. Y. Med. Record*, Dec. 11, 1880. [As bearing upon the amount of bromide of potassium to be given in cases of epilepsy, Cartwright Bartholow, in his recent valuable lectures, reminds us that the condition of the faucial reflex affords an indication of the state of the spasm-centre, Voisin having shown that when no movement is caused by touching the base of the tongue, the pillars of the fauces, and the walls of the pharynx, the effect of the bromide is sufficient.—*Ed. PERISCOPE.*]





## PART IV.

### MEDICAL MISCELLANY.

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*Reports, Transactions, and Scientific Intelligence.*

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#### TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

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SESSION 1880-81.

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GEORGE JOHNSTON, M.D., President.

ALEXANDER NIXON MONTGOMERY, M.K.Q.C.P., Honorary Secretary.

*Wednesday, February 2, 1881.*

The Vice-President, DR. WALTER G. SMITH, in the Chair.

DR. HENRY KENNEDY read a paper entitled "Thoughts arising from the perusal of Sir William Jenner's latest Essay on Typhoid Fever." [It will be found at page 201.]

The CHAIRMAN said that Dr. Kennedy stated that relapses had been infrequent in his treatment. That is worth bearing in mind in reference to the question of the treatment of typhoid by cold baths, which has been so popular in Germany of late years. According to the recent investigations of an experienced London physician the frequency of relapses is doubled by the treatment by cold baths. If that be established it is idle to speak of their value in the treatment of this disease during its acme.

DR. PATTON, in confirmation of what Dr. Kennedy had stated as to the relations between the strumous diathesis and typhoid fever, detailed the case of a coachman who died of severe typhoid at the end of a fortnight. His appearance was very strumous. He had red hair and a mottled "turkey-egg" skin. He was very delirious at times during his fatal illness, and died of hæmorrhage from the bowels.

DR. DOYLE observed that milk has been recognised as a means of conveying this disease. Within the last two months three cases of typhoid fever had been under his care, and it was found that one of the men who milked the cows from which milk was supplied was suffering from syphilis. The question of the possible connexion between diseases

of the genital organs and typhoid fever should be investigated. In Dr. Doyle's opinion there is much resemblance between the characteristic appearances of the ileum in typhoid and the characteristic local sores in syphilitic disease. Another point is that syphilitic ulcers occur in the intestines. In the cases in which Dr. Kennedy considered that the milk did harm he might have found, on investigation, that the milk came from an infected source. With reference to the preventive remedies spoken of by the German authorities, Dr. Doyle said he had given from 5 to 10 grains of calomel, and had found the case to progress favourably. He had never tried iodine. On two or three occasions, having had to deal with epistaxis, on taking the temperature, he was able to diagnosticate typhoid fever. The administration of stimulants would to some extent depend on the social circumstances of the patients.

DR. J. W. MOORE remarked that Dr. Kennedy, in his argument as to the relation of this form of continued fever with the strumous diathesis, had mentioned that typhoid fever is often preceded by "bronchitis," and often complicated by "*catarrhal pneumonia*." We know that "heavy colds" after a few days have often been said to have developed into typhoid fever. No doubt catarrhal symptoms are sometimes present in the earlier stages of typhoid fever, but it was not so certain that true bronchitis is often present. In the speaker's experience the form of pneumonia which complicates typhoid fever is more frequently croupous than catarrhal. No one denies that the solitary glands of the colon are engaged in many cases of typhoid fever. Dr. Kennedy laid stress on the use of stimulants, but the quantities he advocates are so small that their use could hardly be called a treatment by stimulants. The experience of the physicians at Cork-street Fever Hospital is that typhoid does better without stimulants than typhus; and these are generally given in typhoid in very small quantities, and more to satisfy the whim of the patient than to fulfil any special indication. One reason is that the patients in the former disease are as a rule younger than those who pass through typhus. Dr. Moore believed milk to be generally a most useful article of diet in typhoid. We cannot judge of the possibly ill effects of milk in individual cases of the disease from learning that it has disagreed with the patient when in robust health. What is unpalatable in health may become most suitable during disease; and our knowledge of the condition of the organs in typhoid fully justifies us in anticipating that a bland nourishing food like milk would be more readily assimilated than almost any other article of food. The management of the bowels in typhoid, and particularly in its later stages, was a very delicate question. To counteract constipation, we might give a teaspoonful of castor-oil or less occasionally, and order a simple enema every second or third day. The speaker's experience of the use of cold baths was limited to two cases in which there was hyperpyrexia, and in one of these cases the

patient was so much relieved by it that she asked when she would get another cold bath. That case, however, proved fatal. There can be no question that harm has been done by the indiscriminate use of cold baths. Many so-called cases of relapse in typhoid were not such, properly speaking, at all, but secondary fevers arising from some error in diet. Dr. Moore had seen all the symptoms come back after the use of butcher's meat at too early a stage of convalescence; and in these cases some local inflammation set up in the bowel, which is not yet healed, is to be distinguished from true relapse, which has been explained by Dr. Hudson as depending on the reabsorption into the general current of the circulation of some impure blood which had been stored in the enlarged spleen. In true relapse we should have recrudescence of the eruption and reappearance of the rose-spots. Dr. Kennedy had mentioned in his paper that a "*mixed* type" of fever had been recently observed in Cork-street Fever Hospital; but he seemed to be under a misapprehension. No doubt cases had lately occurred in that hospital which were with some difficulty classified under the heads of typhus or of typhoid. But what did Dr. Kennedy mean by a *mixed* case of typhus and typhoid fevers? Is it that the patient is at the same moment suffering from two distinct fevers, or that he is suffering from a hybrid fever? In Dr. Moore's opinion there is no such thing as a hybrid of typhus and typhoid fevers, but it is indeed true that a typhoid patient may contract typhus while still labouring under the original disease.

DR. LALOR asked Dr. Kennedy whether the finding in the ileum the characteristic typhoid ulcers excluded the idea that the fever of which the patient died may have been typhus? He (Dr. Lalor) believed that he had frequently seen ulcers of the ileum and colon in typhus, and in other forms of fever.

DR. HAWTREY BENSON said that for many years his practice had been, when the temperature of a patient rose to  $106^{\circ}$  or  $105.5^{\circ}$ , to give a large dose of quinine, and he had found great benefit to result from it. In some cases there was no particular fall of temperature, but, as a rule, there was one of from  $3^{\circ}$  to  $5^{\circ}$ , and on one occasion a fall of  $7^{\circ}$  ensued from a dose of 25 grains. It had been objected that the temperature will rise again. But the answer to that is, that continued high temperature produces a destruction of the tissues, and interferes with the performance of the functions of the various organs, and if the patient is rescued from this peril, for even six or twelve hours, much good is effected. By giving a large dose every forty-eight hours the organs are placed in the best condition for recovering their functions. It was true that in some cases these large doses of quinine disagreed with the patient. To avoid this he ordered the medicine to be given dissolved in a minimal quantity of sulphuric acid, with a little water.

DR. KENNEDY (in reply) said he had found stimulants of far more

value than quinine. The effect of their use, at the proper time, and with due discretion, is to lower both the pulse and the temperature. He usually commenced with a teaspoonful of wine, and advanced the quantity up to a reasonable amount in one or two days. Stimulants are especially of use when the fever is likely to run a long course, and the pulse and temperature keep up. In the cases of children of under six years of age, two ounces in twenty-four hours has been commonly given, in divided doses, in the hospitals, and it has acted exceedingly well. Stimulants act better with children than with adults, because the former are not accustomed to them. The majority of patients who have hæmorrhage recover. That opinion was first advanced by Graves, and afterwards taken up by Trousseau. The speaker's experience of the use of pure milk is that it is either not borne at all, or that it is converted into a curd in the stomach, and is thrown up after a time. Pneumonia is as frequent in one form of fever as another. The relapses that he had seen were characterised by the recurrence of the spots, and of the high temperature, and frequently by vomiting. In reply to Dr. Lalor's question, Dr. Kennedy stated his belief that at times typhus and typhoid fevers are mixed. The external symptoms are those of typhus, but a *post mortem* examination discloses ulcers in the ileum. There may, in other words, be a hybrid of the two diseases.

DR. A. W. FOOT read a paper on "A Case of Paralysis of both Spinal Accessory Nerves, followed by Recovery." [It will be found at page 211.]

The CHAIRMAN observed that this case adds another to the list of those showing the extraordinary injuries that the nervous organisation can be subject to, without producing permanent anatomical change and consequent pathological results. There are many cases of injuries occasioned to the cranium from falls from heights, in which the patients recovered, although they were in a comatose state for a great length of time. Dr. Foot said he gave the boy large doses of ipecacuanha wine, but it failed to act as an emetic. That was probably fortunate, for had it acted the boy's life might have been cut short.

DR. LALOR could not concur in the conclusion that the emetic would have necessarily produced regurgitation of food into the boy's larynx, and consequent death. In three cases of epilepsy observed by himself, death had occurred by suffocation in the way suggested, and food was found in the larynx and bronchi. But all these patients had been lying on their backs.

DR. CRANNY mentioned a case which had been under his care in which a beam of timber fell on a man, breaking his spine between the last dorsal and the first lumbar vertebræ, causing a separation of about two inches. He had reflex action, with considerable pain in the lower



part of the abdomen and limbs. He was put into a plaster cast, and suspended by Sayre's apparatus, made a perfect recovery, and has now complete use of his limbs.

DR. FOOT (in reply) said the boy was naturally delicate, and had been subject to chronic catarrh of the lungs, which ensued from whooping cough at an early age. On that account he (Dr. Foot) feared he had overloading of the tubes, and was therefore anxious to give him the emetic. He was inclined to have injected apomorphia, but was now glad that he did not do so, as he had found that drug to be most dangerous. Concussion of the spinal cord was rare in children, on account of the imperfect ossification of the canal at their time of life, and the greater elasticity of the bones.

The Society then adjourned.

#### THE TREATMENT OF URÆMIA IN CHILDREN BY PILOCARPINE.

FROM the study of eleven cases, all treated by muriate of pilocarpine, Dr. Praetorius, of Mayence, arrives at the following conclusions:—The action of the alkaloid of jaborandi on children may be recognised by active carotid pulsation, reddening of the face, and profuse perspiration, which begins on the forehead, upper lip, and chin, and gradually extends over the whole body. These symptoms appear about three to five minutes after hypodermic administration of the drug. Accompanying the diaphoresis a profuse salivary secretion is observable. In infants the sialagogue action is the more reliable of the two. The temperature is affected only in so far as the evaporation from the sweating cutaneous surface produces a slight secondary lowering. The single dose of the drug is  $\frac{3}{2}$  to  $\frac{1}{3}$  of a grain (0.002–0.02). The children, as a rule, complain of severe nausea, and vomiting is frequent. Conditions of slight collapse are sometimes noticeable. The following *résumé* of inferences is appended to the paper:—1. The treatment of uræmia by hypodermic use of pilocarpine gives satisfactory results. It appears advisable to resort to this plan of treatment as soon as headache, an irregular pulse, and vomiting point to the probability of renal complications. 2. The contra-indications for its employment are—the presence of grave complications, abnormal weakness, collapse, or general cutaneous dropsy. 3. It appears that in “glomerular” nephritis pilocarpine fails to produce a beneficial effect. But as this variety of Bright's disease cannot be differentiated from other forms by our present methods of examination, this condition cannot, of course, be classed with the contra-indications. 4. In addition to the diaphoretic action of the muriate of pilocarpine, a direct influence on the renal secretion appears to exist.—*Jahrb. für Kinderheilkunde*, Sept. 2, 1880, and *N. Y. Med. Record*, Dec. 18, 1880.

# PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

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## FORTY-THIRD ANNUAL SESSION.

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JOHN A. BYRNE, M.B., President.  
WILLIAM ROE, M.D., Honorary Secretary.

*Saturday, January 8, 1881.*

THE PRESIDENT in the Chair.

*To what extent are Utero-Vaginal Injections advisable in Childbed?*

By W. J. SMYLY, M.D., Univ. Dub.; F.R.C.S.I.

UTERO-VAGINAL douching is, no doubt, a practice of great antiquity, nevertheless it is now employed in childbed to an extent never dreamt of by our forefathers—many eminent and experienced obstetricians averring that it should be employed during, and subsequent to, every confinement, whilst others go even further than this and insist that not only should it be employed in every case, but that its action should be permanent—a process to which the term “instillation” has been given.

Two reasons may be assigned for this remarkable change in practice—(1) The very general acceptance of the doctrine promulgated by Semmelweis in 1847, “that puerperal fever is, without any exception, a fever of absorption, arising from the absorption of decomposed animal organic matter,” which led to a belief in the identity of this disease with ichoræmia, septicæmia, and pyæmia; and (2) the wonderful power of so-called Listerism in preventing these affections in the field of general surgery, which led to a desire for the employment of similar antiseptic precautions in childbed.

Whilst the delivery of patients under carbolic spray and the subsequent closure of the vulva with gauze or cotton containing antiseptic substances has not as yet made much way in these countries, the practice of injecting fluids into the uterus in the hope of destroying the poison ere it contaminate the system is a proceeding at once so evidently rational and so easily accomplished that its general adoption is no matter for surprise.

Although so easily carried out, this proceeding is not altogether free from danger.

In the first place, the introduction of any foreign substance into the uterus is in itself an evil. “Nature provides against the period of parturition,” says Dr. Barnes, “a special supply of nerve force, and this is

associated with an increased irritability of the nervous centres." It is not, therefore, to be wondered at that the injection of a foreign fluid, especially if cold, should sometimes give rise to violent contractile pains, rigors, hysterical symptoms, and even convulsions. Two cases of Dr. Herdegen's will serve as illustrations here :—

CASE I.—The patient, who was aged thirty-two, was delivered by version, on account of the cord having prolapsed. On the third day, the lochia being foetid, it was determined to wash out the uterus with a one per cent. solution of carbolic acid. The introduction of the catheter was immediately followed by the discharge of some blood. Scarcely had a few ounces of fluid flowed into the womb when the patient closed her eyes and complained of weariness, and soon became unconscious. Then followed clonic convulsions at first of the upper and after of the lower extremities. In about ten minutes she became maniacal with wild shrieking, so that she could be kept in bed with difficulty. Intelligence gradually returned in the course of half an hour, and a copious sweat broke out upon the surface. About an hour afterwards she had a violent rigor; otherwise the night passed over quietly.

CASE II.—The second case was a primipara, aged nineteen; labour natural. On the fourth day, temperature having risen considerably, and the perinaeal wound having assumed an unhealthy appearance, whilst the lochial discharge was brown and foetid, vaginal douches were ordered. On the fifth day, temperature having risen to 102° and the pulse to 120, Dr. Herdegen pushed the catheter into the uterus, but scarcely had it passed the widely-gaping os than the patient was seized with convulsions, which were confined to the upper extremities; the pupils were contracted and did not respond to light; the face became cyanotic, and respiration ceased. The catheter was immediately withdrawn. Scarcely a minute elapsed before consciousness returned, and she complained only of dimness of vision and deafness. She was soon bathed in cold perspiration, and about half an hour after had a severe rigor, which lasted about fifteen minutes. A few hours after she was as well as before, and eat her dinner with a relish. Convalescence was uninterrupted.

He does not consider that these cases could be considered as examples of carbolic intoxication, because in the first scarcely nine ounces of a one per cent. solution flowed into the uterus, and in the other the catheter had scarcely been introduced when the attack occurred. The urine also was carefully examined in the first case, but contained neither carbolic acid nor albumen. He therefore concludes that it was not the disinfectant used but the douche itself which gave rise to these symptoms. "In excitable or weakly persons," he says, "an irritation of the interior of the uterus is quite sufficient to cause such an attack. I need only cite the results which have been observed to follow the passing of a

catheter or the escape of a leech into the uterine cavity." Until further observation shall have made the matter clearer he prefers to abide by Richter's explanation—namely, that these attacks are hystero-epileptiform in character, arising from irritation of the uterine mucous membrane. Dr. Bruntzel has recorded a most remarkable case. A servant girl, aged twenty-seven, was delivered after a natural labour, and all went well until the fourth day, when she had a violent rigor, followed by headache and a rise in temperature, and fœtor of the lochial discharge. A one per cent. solution of carbolic acid was injected next day; there was no improvement, and the douche was repeated. Little more than a pint of fluid had flowed through the tube when the patient suddenly gesticulated with her arms, and, giving vent to a few inarticulate sounds, lost all consciousness. The canula was at once withdrawn from the uterus, and recourse immediately had to artificial respiration, hypodermic injection of ether, and friction to the surface, but without effect. The patient was pulseless from the moment of the accident.

The autopsy, which was made twenty-four hours after death, revealed absolutely nothing. The interior of the uterus showed no sign of endometritis, and the pelvic vessels and heart were normal. In this case death was supposed to have been caused by shock. It is possible that the introduction of the tube and sudden distension of the uterus may have caused a sudden stoppage of the heart.

Towards the end of the last century Leroux called attention to the fact that intra-uterine injections in childbed might very easily displace thrombi, and open the mouths of veins already closed; and Richter has recorded two cases in which hæmorrhage was caused by the syringe, in one as late as the eighth day after delivery. We need only recall the conditions of the placental site after delivery, its prominent surface bulging forward into the uterine cavity, with the clots which help to close the mouths of the uterine sinuses projecting from it, to understand how easily they might be displaced either by the nozzle of the syringe itself or by the force of the injected stream; thus not only may hæmorrhage result, but a way be opened for the entrance of the fluid or atmospheric air into the current of the blood.

There is yet another mechanical evil possible, and that is the over-distension of the uterus. This occurs when the return flow is delayed by a relatively narrow cervix, caused, as was pointed out by Münster, by a spastic contraction at the os internum resulting from mechanical irritation. To overcome this resistance the womb makes violent expulsive efforts, causing severe uterine colic, and possibly leading to inflammation of the uterus itself, or rekindling some old inflammatory process in its neighbourhood.

During this violent struggle of the distended uterus to overcome the resistance of the spasmodically closed os another danger is imminent—



namely, that the fluid may escape through the Fallopian tubes into the abdominal cavity. That this accident is exceedingly improbable in the fully-developed uterus is evident from the anatomical conditions present: the large size of the cavity, the relaxed cervix, and the mouths of the tubes being frequently closed with remains of the decidua; but that it is possible I have no doubt, for in two cases in which the os was plugged for hæmorrhage by Hildebrandt the blood collected in the uterus and forced its way through the tubes into the abdominal cavity. A case which occurred in Professor Olshausen's clinic in Halle seems explicable only by supposing that the fluid passed through the tubes into the abdominal cavity.

The patient who had been delivered with forceps progressed favourably for five days. On the fifth day the vagina was injected by the midwife with a two per cent. solution of carbolic acid. On the third occasion she observed that the tube, which was a metal one, about the size of a No. 12 catheter, with the opening at the end, slipped remarkably far into the vagina. When the irrigation was nearly completed the patient suddenly became faint. The canula was immediately withdrawn, but no blood escaped from the vagina. The patient remained unconscious for a quarter of an hour. When she came to herself again she complained of a violent pain in the abdomen, increased by pressure; her pulse was very rapid, but there were no head symptoms. The temperature, which a quarter of an hour before the accident had been ascertained to be normal, rose in the course of four hours to 104° F. In spite of hypodermic injections of morphia the pain continued for hours in no inconsiderable degree.

Bailly also records two cases as proof of the permeability of the tubes. In one a patient who had borne careful douching was immediately attacked with violent peritonitis after a forcible injection; in the other an injection carried out by an unskilled person brought on peritonitic symptoms.

The entrance of air into the uterine sinuses was suggested by the younger Legallois, in 1829, as being the possible cause of some, at least, of the sudden deaths after delivery. "The mechanism," says Dr. McClintock, "by which the introduction of air into the veins can be effected admits of being explained in a few words. The veins of the gravid womb present four remarkable characteristics—viz., their extraordinary size, their freedom of inosculation, the total absence of valves, and their termination on the internal surface of the uterus at the site of the placenta by large open orifices. If the uterus be examined soon after delivery, at the full term, the majority of these apertures will readily admit a goose-quill, and some will even allow the little finger to penetrate without laceration. During contraction of the uterus all the openings are hermetically closed; but when it is relaxed, they again become proportionally

more or less patulous. From this it is manifest that the same condition of the organ which causes flooding is exactly that which is indispensable for the ingress of air—so that the latter, when it does take place, is almost, of necessity, preceded or accompanied by hæmorrhage.” This is a most important fact, and it has been observed in almost all cases where air or other fluids have entered the circulation.

The symptoms of the accident are sufficiently constant—viz., a gurgling sound, escape of blood from the genitals, sudden sense of oppression and breathlessness, collapse, and asphyxia. Wynn Williams mentions two cases where air was injected into the veins during the injection of warm water in childbed.

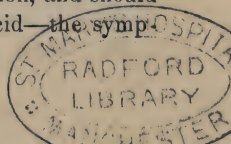
The following case came under my own observation :—

M. M., aged thirty-five, was admitted into the Rotunda Lying-in Hospital on the 28th of April, 1879, and was delivered of her first child early the next morning. The perinæum was lacerated down to, but not through, the sphincter ani; otherwise her labour was natural, the second stage occupied about three hours, and the placenta was expelled in twenty minutes. Her convalescence proceeded most satisfactorily until the evening of the third day, when the perinæal wound having assumed an unhealthy appearance, and the lochia being somewhat offensive, she was ordered to have the vagina syringed with a solution of Condyl’s disinfecting fluid. This was done by the midwife in the manner usually adopted in the hospital—viz., lying upon the back with the buttocks upon a bed-pan, and the instrument used was an ordinary Higginson’s syringe.

Suddenly the patient became collapsed, and the medical officers of the institution were at once sent for, who found her still in the same position as at the moment of the accident. Respiration had entirely ceased; the pulse could not be felt at the wrist, but a faint cardiac impulse was still perceptible. The surface presented a peculiar mottled marble-like appearance from over-distension of the superficial veins. Artificial respiration was at once had recourse to, hypodermic injection of sulphuric ether, and a hot poultice over the cardiac region. Faradisation was afterwards tried; but though at first the heart’s impulse increased in strength, it gradually became fainter, and at last ceased altogether; mucus collected in the throat, and in twenty minutes from the occurrence of the catastrophe she was dead.

A *post mortem* examination was made the next morning, when a quantity of frothy blood was found in the heart, and when a knife was thrust into the widely-distended iliac veins, air escaped with an audible whiff. The uterus and its appendages showed nothing abnormal.

In like manner the fluid injected may enter the circulation, and should this contain any poisonous substance—such as carbolic acid—the symptoms peculiar to such poison will immediately supervene.



Dr. Kuster was induced to undertake a series of experiments in connexion with carbolic acid, by observing dangerous symptoms follow operations in which this substance had been much employed, and where patients had subsequently been treated with carbolic dressings. He injected solutions of the acid into the veins of dogs, and observed that the symptoms which followed were—general muscular trembling, with clonic spasms; loss of consciousness, and fever. He divides the cases into three classes according to the severity of the symptoms:—

1st. Where the urine alone is affected, being changed in colour varying from a light green to almost black.

2nd. Where general symptoms are superadded—viz., headache, loss of appetite, nausea, vomiting, salivation, fever, and sluggishness of the pupils.

3rd. Acute carbolic intoxication; sudden unconsciousness, deathly pallor, clammy sweat over the surface; rapid and small pulse, almost imperceptible; respiration shallow, stertorous, soon becoming irregular, and at last entirely ceasing; temperature sinking remarkably.

The following extracts from cases reported by Dr. Otto Küstner, of Jena, will serve to illustrate these symptoms:—

In one case, scarcely had he begun the injection when respiration became very hurried, and the patient exclaimed “What is the matter?” face assumed an anxious expression, and the pulse became very rapid and almost imperceptible. The irrigation was at once stopped, and immediately the paroxysm was over. When questioned subsequently, she said that for a moment all appeared black before her eyes. There was a slight hæmorrhage, and the urine was strongly carbolic.

The next case illustrates the severer type.

The catheter was guided into the uterus along two fingers whilst a stream of five per cent. carbolic solution flowed through it, but scarcely had it entered the cavity when the expression of the patient's countenance changed; she became livid, the lips blue, the eyes drawn upwards and inwards, with contracted pupils; consciousness was completely gone; respiration forty; pulse 130 or more, small, scarcely recognisable. Then commenced clonic convulsions of the upper extremities; the head drawn backwards with twitching of the facial muscles, this lasted about ten minutes; cold perspiration broke out upon the forehead, and, in the course of an hour, the patient gradually returned to consciousness.

Similar cases are recorded by Drs. Olshausen, Fritsch, Fisher, and others.

Some people believe that where such alarming symptoms follow the use of carbolic acid it should be discarded in favour of some less dangerous antiseptic. Thus Dr. Reiman, of Kiew, says—“It appears to me that the use of so dangerous a substance for irrigation should be as limited as possible, if not avoided altogether.”

Dr. Fritsch, on the other hand, denies that these alarming symptoms

are due to a specific carbolic poisoning. From observing the similarity in the symptoms in a case in which the blood of a lamb had been transfused and one in which carbolic solution had entered the current of the blood he came to the conclusion that both were due to the same cause—namely, the toxic effect of a heterogeneous fluid upon the brain. That the symptoms are not peculiar to carbolic acid is further proved, he thinks, by a case in which salicylic acid was the antiseptic used, and in which similar symptoms showed themselves. A search after harmless disinfectants is therefore, in his opinion, of little use, for when the fluid passes directly into the circulation the danger is almost as great with one as with another. He thus describes the symptoms in the case where salicylic acid was used.

During the injection the patient became suddenly collapsed, unconscious, with an enormously rapid pulse. These symptoms gradually improved, but delirium set in and increased to mania, which continued all the night, but he feared to give morphia on account of ever-threatening collapse.

The last risk to which I shall call attention is the danger of communicating the very disease to our patients which it is our object to protect them from. This is especially likely to occur when the fluid used does not contain any antiseptic, and when the pipe has been previously used to administer enemata. But septic matter is not always conveyed to patients from without. "It may," says Semmelweis, "be generated within the limits of the individual affected, when organic parts which are to be expelled after parturition are decomposed before this happens, and, being absorbed, produce puerperal fever through self-infection. The organic parts are fluxus lochialis itself, the decidua remnants, and blood coagula, which are detained in the uterus." Now, in the puerperal uterus all the conditions most favourable to putrefaction are present, with the exception of atmospheric air, and this is very frequently injected through the ordinary enema pump. This entrance of air, especially should it happen to be already impregnated with septic germs, must be looked upon as a serious accident—analogueous, I think, to a simple fracture becoming compound.

It would be difficult to isolate cases in which septic poisoning originated either through direct inoculation, through the use of the syringe, or indirectly, through the injection of atmospheric air by the same, because other sources of infection after delivery are so numerous; but cases have been reported by Grenzer, Martin, Litzman, and others, where puerperal fever followed the use of the syringe with a view to the induction of labour. The conditions generally are, however, so much more favourable to absorption after than before delivery that it is, I think, fair to infer that the use of the syringe being more frequent, inoculation would be so too.



Dr. Hofmeir, of Berlin, thus speaks on this subject:—"It has of late been advised, in the prophylaxis of puerperal fever, to irrigate the vagina, cervix, and uterus in all cases with a two per cent. solution of carbolic acid. I wish to show the not inconsiderable danger of this method, resulting, in my opinion, from the necessity of bringing hand and instruments in direct contact with large raw surfaces; besides, in institutions we have not the conditions so completely under control that we can guarantee the absolute cleanliness of instruments, &c. Of 260 normal cases of recently-delivered women whose uterus I injected, 42 became ill with inflammatory affections of the genital tract, or 16 per cent. Of 249 not so treated, 19 became ill, or 8 per cent. Of the first series, 8 were dangerously ill; of the latter, only one. Even these statistics are serious. How much more serious might they be if carried out under less favourable circumstances? The circumstances are, however, considerably altered when, during the birth, gangrene, decomposition, and formation of gas in the uterus, and, subsequently, fever develop themselves; when we consider how fatal is this condition under an expectant treatment, according to Standes' statistics—deaths, 50 per cent.; illness, 57 per cent.; undisturbed recovery, 43 per cent.—we must seek to remove decomposing masses, or, at least, to make them innocuous, and for this purpose a 5 per cent. solution is required."

I should apologise for this long extract, but it embodies exactly what I should wish to say, and expresses it in a very powerful manner. I cannot but think that to inject every uterus or even vagina in childbed is "meddlesome midwifery."

A very important point, and one worthy of consideration, is that in general the carrying out of the process must be entrusted to women who, if not altogether ignorant of its attendant dangers, are at least not capable of thoroughly understanding them. It is, therefore, most important that the method employed should be simple and, at the same time, such as to reduce the risks to a minimum.

For this purpose the canula introduced should be made of metal, glass, hard vulcanite, or other substance which can be thoroughly cleansed and disinfected. Gum-elastic materials are condemned because they quickly become soft, and when cracked readily absorb septic matter. The vessel from which the fluid is drawn should be known to be pure and clean, and should be at a higher level than the patient's body, otherwise there is a constant liability to inject air. Lastly, the fluid should flow in a steady and gentle stream, not in an unequal and jerking manner.

All these perfections are to be found in the common irrigator, with metallic tube and stop-cock, whilst the reverse is the case with pumping instruments, especially the ordinary Higginson's syringe, with which most midwives are supplied—having a single gum-elastic tube, which they frequently use both for vagina and rectum.

In conclusion, I wish to submit three questions to the Society :—

1. Are injections advisable in all cases, and, if not, what are the indications for using them ?
2. Should they be continuous, or intermittent, and if the latter, at what intervals should they be repeated ?
3. What is the best method for carrying out the process ?

DR. ATTHILL.—As syringing, or, more correctly, washing out, the uterus is a practice which I have for a long time adopted in the Rotunda Hospital, and which I am employing more extensively every day, I would like to say a few words on the subject. First, as to syringing the vagina, that is very useful, and, if carefully done, perfectly safe, though, if carelessly done, accident may occur. To syringe in every case after labour is unnecessary, but the cases in which it should be practised are very numerous. Thus, in all cases where the discharge is fœtid the vagina ought to be syringed, and very possibly the uterus also. It is noteworthy that the only instance in which trouble occurred in a case of this sort in the Rotunda Hospital was one in which the uterus was not to be syringed. The woman had a disagreeable vaginal discharge, and the nurse was told to syringe the vagina in the usual manner, and I suppose that the os being patulous, the tube slipped into the uterus, and that the syringe not having been first filled with water air was injected, which got into the veins, and death followed. The tubes I now use render such an accident impossible in this case, as the vagina alone was to be syringed, and it was done by a comparatively unskilled hand. If the uterus is to be syringed it never should be done except by a skilled hand. The rule in the Rotunda Hospital is that if the uterus is to be washed out it is done by one of the assistants or the head midwife. No nurse in training or ward nurse is allowed to do it. In suitable cases I look on the practice as a very valuable one indeed. Thus, last Sunday a young woman was delivered in the Rotunda Hospital after a natural and easy labour. She was of a leuco-phlegmatic temperament and had a sharp dash of *post partum* hæmorrhage,\* which was easily checked by the application of cold. Next day the nurse reported that she had had rather profuse local discharges, and I ordered her ergot. In the afternoon she had a slight rigor, and on seeing her in the evening I found her temperature to be 103°, with quick pulse, no abdominal tenderness, and a discharge profuse but fœtid, and I ordered the uterus to be washed with a 4-grain solution of carbolic acid. The result was that a clot as large as my fist, and which was beginning to decompose, was washed out; the symptoms rapidly subsided, and the patient recovered. If that patient's uterus had not been washed out with a carbolised lotion, or some other antiseptic solution, she would probably have died of septicæmia. In all cases then of fœtid uterine discharge the uterus should

be carefully syringed out. When the discharge is evidently due to an unhealthy condition of the vagina alone, it alone should be syringed. In nearly all cases we use the carbolic lotion, and the precaution is always taken of having the syringing done by a skilled hand. For the last two or three years—since the accident which I have mentioned occurred—we have used the nozzle which I now produce. It is made of vulcanite, is bulbous at the extremity, and is not perforated at the end, but at the sides only. The nurses are carefully trained never to introduce the tube without first filling the syringe with water, and thus prevent the possibility of air entering. With these precautions there is no risk of any disagreeable symptoms occurring. When dealing with cases of foetid discharge after abortion, or when the os uteri has become small soon after labour at the full term, I use an ordinary double catheter made of vulcanite, such as is used with males for washing out the bladder, only that it has a different curve. With this instrument the fluid is not injected directly against the fundus, but escapes by an orifice at the side. As to the danger of any septic matter being introduced by the tube, that is just possible, and for that reason I have long since prohibited in the Rotunda Hospital the use of the ordinary gum elastic vaginal nozzles, because they become softened and crack, and the cracks might become receptacles for septic matter. But with ordinary care no septic matter can be deposited on the instrument I show you. Care, however, should be taken to wash it with a carbolic lotion before being used, and I have never had any reason to suppose that septic matter was introduced by the syringe. The question whether carbolic acid is dangerous or not is a very fair one to raise. I have come to the conclusion that it is perfectly safe if used twelve or twenty-four hours subsequent to delivery, but I am not so sure that it is safe if used immediately after delivery. I remember that on one occasion when a woman was delivered of a putrid child I syringed out the uterus with my own hands with carbolic lotion; and I am not quite sure there was not absorption of carbolic acid. She subsequently died. I therefore now generally use Condry's fluid, when, on account of the presence of an offensive discharge occurring during labour, it is necessary to syringe out the uterus immediately after delivery; but after the lapse of twelve hours we employ a 3 or 4 grain solution of carbolic acid, and it answers admirably, the course adopted generally being to wash out the uterus first thoroughly with warm water and then, without withdrawing the pipe, to inject a pint or so of the carbolic lotion.

DR. ROE.—In what position do you place the patient?

DR. ATTHILL.—Sometimes on the side, and generally on the back.

DR. MACAN.—I would wish to draw attention to the cases in which the practice should be adopted before the woman is delivered. Originally it was thought that the uterus of every woman should be injected after delivery. Bischoff maintained that the external genitals should be

carefully washed out with carbolic solution before labour began, and that at the commencement of labour the vagina should be injected—or, as I should prefer to say, “irrigated.” First, then, as to “irrigation” of the vagina at the commencement of labour, I think it is a very safe and good practice. If there be a tedious labour and the discharge becomes scanty, and the vagina hot, or there be symptoms of decomposition, an injection should be made every two hours while labour is going on. Dr. Smyly said the practice had been followed of using it in every case after labour, but that had only been proposed in lying-in hospitals. The Germans recognise more perfectly than we do the fact that hospital teaching involves danger, and that to a certain extent we learn at the expense of women’s lives; and “irrigation” was adopted by them as a means of counteracting the danger of infection, arising from frequent examinations. But it never was proposed, as far as I am aware, that every case in private practice should be irrigated. But it was soon found that the danger arising from infection being carried from one woman to another by the process of irrigation, when applied to every case, was greater or at least equal to the danger that the process was intended to avoid. Hence, in Berlin, Professor Schröder has made it a rule that every woman on coming into the hospital should receive her own glass uterine injection tube, which is either broken or sent away with her when she leaves. I think that before turning, the use of the forceps, or the removal of the placenta is practised, the vagina should be irrigated, and after the operation the uterus itself should be irrigated. As a rule, the fluid used should be a two or two and a-half per cent. solution of carbolic acid. After the birth of a putrid child, the uterus should always be irrigated. I am inclined to think the fatal case mentioned by Dr. Atthill is rather to be accounted for by the want of sufficient irrigation than otherwise; and I believe that a large number of cases of puerperal fever from putrid children would be prevented by irrigation. You would remove the septic matter and the woman would get well. The symptoms looked on as absolutely requiring injections are a putrid child, foetid lochia or liquor amni, and a rise of temperature after labour; and the number of times the injection is to be repeated depends altogether on the effect of those already applied. Of course we all recognise one form of puerperal fever, called acute septicæmia, in which it is almost hopeless to expect any benefit from irrigation. The woman is killed in such cases by some septic poison introduced during labour. There is a class of cases in which septic poison is introduced into the vagina, without anything in the shape of the inoculation of a wound taking place, and in which a certain decomposition takes place in the vaginal and uterine discharges. These are the cases in which vaginal irrigation is most essential. Again, in a great number of instances the uterus becomes relaxed and antelected after labour, so that the fundus becomes



lower than the neck, which prevents the free escape of the lochia, and a portion of them accumulates within the uterus. Again, a sort of cul-de-sac may be formed in the vagina when the woman lies on her back, in which lochia accumulate. In such cases, if there be the slightest symptom of decomposition, irrigation should be used. Another method is instillation, or constant permeation of the uterus with an antiseptic fluid. The objection to this method is that an instrument is left permanently within the uterus, and may tend to produce inflammation. I, therefore, think it is better that the injection should not be continuous but intermittent, and the number of times it is applied must entirely depend on the effect produced. In the large majority of cases three or four times in the twenty-four hours would be quite sufficient. The statement that putrefaction or simple decomposition ever produces puerperal fever is doubted by many. I do not give my own opinion about it, but I think there must be something more than simple decomposition to produce puerperal fever. That air enters the vagina in almost every labour is an absolute certainty. The position of the patient on the side when injection is performed may be sufficient to cause the entrance of air; those who have made examinations after labour know how the vagina blows out like a balloon. In every operation of turning also air is introduced, as well as at the removal of the placenta.

DR. KIDD.—Dr. Smyly's paper is entitled one on "Utero-vaginal Injections." It is important that we should draw a distinction between the two forms of injection for the sake of clearness. By "vaginal" injections I understand those in which the tube of the syringe is introduced a short way into the vagina, and any discharge lying in that passage is washed out. By "uterine" injections I understand those in which the tube is introduced into the cavity of the uterus itself, and that cavity is washed out. These are two very distinct processes. As to vaginal injections, I must say I have not the fears of them that have been expressed here. My own practice for a great many years has been in every case to have the vagina washed out daily. I believe it to be very advantageous and very comforting to the patient, and it prevents the absorption from the vagina of foetid and offensive local discharges. Lochial discharge accumulates in the vagina, and becomes offensive. The washing of it out is, I believe, a useful, wholesome, and perfectly safe practice, and one which ought to be adopted in every case of labour. As to the question of uterine injections, it is a subject that has very long occupied my attention. So far as my knowledge goes, it is a practice that was first introduced by Dr. Braxton Hicks. I believe he was the originator of it. He very early brought it under my notice; and, before he published anything on the subject, he and I had communications about it. When I first had the honour of occupying the presidential chair of the Society I brought the subject before them in an address which I

delivered on leaving the chair. I then expressed a very strong opinion as to the advantages arising from washing out the uterus in cases of puerperal fever. All my experience from that day to this has confirmed the opinion I then expressed—that it is a practice attended with very great benefit, and that, in a very large number of cases, it checks puerperal fever, and saves life. Dr. Smyly has adduced a number of cases in which accidents occurred. I do not like to boast, but I am happy to say that, as far as my experience goes, there have been no accidents from it. The accidents we have heard of are altogether derived from the practice of the German authorities, and they may be divided into three classes. First, we have cases of hystero-epilepsy or reflex phenomena produced by the introduction of the tube. In one of the cases Dr. Smyly mentioned the symptoms did not occur until after the injection had been commenced; in the other they occurred on the introduction of the tube, and before the injection had been commenced. I take it that, in the latter case, it was not the introduction of the fluid, but simply the contact of the injection tube with the uterine surface in a highly sensitive patient, whose nervous system was in a very unusually mobile condition, that gave rise to those reflex symptoms. Another class of accidents appears to me to have been the result of the introduction of air. As soon as the injection commenced convulsions and collapse occurred. In the majority of cases I think these patients recovered after a more or less prolonged interval. The accident is one very easy to avoid whether a syringe or an irrigator be used; perhaps the irrigator avoids it the more perfectly. I think if ordinary care be taken to fill the syringe with the fluid before it is introduced into the uterus this accident can scarcely occur. But if the point of the syringe be introduced into the uterus while it is full of air, and then the injection begun, the first effect is to drive the air into the uterus, and the next injection, which is one of fluid, drives the air up into the veins and uterine sinuses. In another class of accidents the tube seems to have been driven through some portion of the wall of the uterus or vagina, and the fluid to have been injected into the cavity of the peritoneum. Unless there had been a previous rupture such a thing as that should not occur. It has been said fluid may be driven along the Fallopian tubes and thus enter the peritoneum, but uterine injections are only required in cases where the os is quite open, and if care be taken not to block it up by using a large tube, or with the fingers, this accident can scarcely occur. In some of the cases described by Dr. Smyly, in which a solution of carbolic acid was the fluid injected, some of it seems to have been absorbed, and to have produced injurious effects. The suggestion of Dr. Braxton Hicks was to use a solution of permanganate of potassium. That is what I have always used. It seems to be much safer than any solution of carbolic acid, and not to be liable, if absorbed, to produce injurious effects. It also tells you pretty clearly when you have sufficiently washed

out the uterus, for as long as it meets with foetid or putrid matter it comes out brown; but if the uterus has been thoroughly washed out the fluid returns of the same colour as when it was introduced. I have so frequently seen both temperature and pulse come down in a few hours after washing out the uterus that I can have no doubt on my mind as to the advantage of the process. I believe that in the majority of cases puerperal fever is produced by the presence of decomposing matter in the uterus. So firmly am I convinced of this, that it is an established rule in the Coombe Hospital in every case in which the temperature and pulse rise to wash out the uterus. It is not done by any inexperienced person, but either by the assistant or by some experienced pupil, and on some rare occasions by the head nurse. The mode in which it is done is simply to fix a catheter to the end of a Higginson syringe, and to press it well into the cavity of the uterus. I can scarcely believe that there is any great danger in using a catheter. I think the nurse and attendants must be of very slovenly habits when a catheter conveys any septic matter into the uterus. The exterior of the catheter can be easily made perfectly clean, and the inside is not liable to be defiled, and ought to be washed out by sending some of the cleansing fluid through it before it is introduced into the uterus. At all events, for some ten years we have been in the habit of using it, and we have never had any disadvantage arising from it. The irrigator may be a safer means of washing out the uterus, but it is not always at hand. In private practice we can scarcely command it. The obstetrician may have one in his bag, but it is liable to the objection that it is carried from one patient to another, whereas every patient has one of the ordinary vaginal syringes for herself, which is free from those objections, and, by proper precautions, can be made as safe as any irrigator. As to the frequency with which uterine injections should be used, I think I have seen errors committed in that respect. I do not think there is any great need for repeating them frequently. If the uterus be once thoroughly washed out and cleared of decomposing matter it is seldom necessary to repeat the process. In some cases it may be necessary to do it a second time, but these are the exceptions. Unless there be some foetid smell I would not be induced to do so. I have seen cases of washing out twice a day for a considerable time, but I think it served no good purpose, either because the system had received too great a dose of the infecting matter before the washing out was commenced, or because it was a fever not depending on the presence of foetid matter in the uterus. Another condition in which I have frequently used uterine injections is after abortion, where the placenta is retained. These cases are exceedingly troublesome. One cannot leave a case of that kind with an easy mind. In cases of this kind I have passed a catheter into the uterus and thrown up a stream of water, the effect of which was to cause the uterus to contract and expel

the placenta at once. This I have frequently done with advantage, and I never saw any bad results from it.

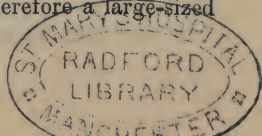
DR. DOYLE.—I wish to bear testimony in favour of the use of antiseptic injections into the vagina. Two years since I had under my care a lady who seemed to have a very acute puerperal fever. On seeing the high temperature, and the disease developing itself, I began injections of carbolic acid and sulphate of quinine night and morning; and during the day I kept carbolic acid and sulphate of quinine lotions round the abdomen and parts. That case did well, though it was at first most unfavourable. I wish to ask what temperature Dr. Smyly advocates for the injections? In cases of injections into the bladder Sir Henry Thompson lays down the rule that you should be guided by the temperature of your patient in fixing that of the fluid you use.

DR. NEVILLE.—It is said that there is a certain amount of danger in these injections of the fluid passing through the Fallopian tube. I do not see that there can be very much danger of that if precautions be taken. A most interesting question is that as to the use of intra-uterine injections as a means of prophylaxis. I think they are justifiable where there is an epidemic of some form of septicæmia or puerperal fever, especially in hospitals. There is one point of some difficulty. Where the lochia after labour are simply fœtid I do not know how you can discover whether the cause is uterine or vaginal.

DR. HENRY KENNEDY.—There is one point which deserves to be noted. I have seen several cases of puerperal fever in which the women were sick before delivery at all. They came into the hospital sick before their confinement. In the cases I have alluded to, after confinement took place, puerperal fever declared itself with virulence.

DR. PUREFOY.—There seems to be a very general impression in favour of the treatment in question with proper precautions. In some cases Condyl's fluid is preferable to carbolic acid. With reference to instruments, I think the catheter is a very safe one. The nozzle of it, however, in some cases scarcely enters the uterus without considerable difficulty; and I think the use of it ought not to be entrusted to the nurse. In some cases I have had a difficulty in passing the catheter up as far as I thought it ought to go. Some months ago, in the case of a patient who, twenty-four hours after an easy labour, was attacked with formidable symptoms, including high temperature and quick pulse, I carried out the treatment in question with considerable benefit. The symptoms recurred more than once, and I repeated the treatment three or four times. I stopped it for a day, and that was followed by a recurrence of the symptoms. The patient recovered.

The PRESIDENT.—A great danger of injecting fluid into the uterus is when there is not a facility for its coming away—therefore a large-sized catheter is always the best to use.





DR. SMYLY (in reply).—I have rather placed myself in a false light by putting forward so many accidents. In the first sentence of the paper, however, I say that the advantages of the practice are so obvious that it is not necessary to illustrate them. A thing not so obvious, however, with respect to the operation is that it is a dangerous one. I think that both uterine and vaginal injections are a very great boon as guarding against puerperal fever. We do not seem to differ as to their value as curative agents where fever is present; the only question is, should they be used as prophylactics? I think that if there be a suspicion of septicæmic inoculation, or if the hand has been introduced, it is advisable to use uterine injections. Dr. Kidd made an important distinction between vaginal and uterine douches. I did not make it because vaginal douches may by accident become uterine; and therefore if this operation be carried out by an unskilled hand it cannot be considered absolutely safe. With reference to Dr. Doyle's question, I think the temperature should be as nearly as possible that of the body of the patient. As to the catheter, I prefer a vulcanite tube, because it will bear hot water.

The Society then adjourned.

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*Saturday, 5th February, 1881.*

Dr. DENHAM in the Chair.

*On a Case of Arrested Development.* By R. D. PUREFOY, M.B.

SOME time ago, through the kindness of a friend who had charge of a suburban dispensary district, I was afforded an opportunity of seeing a very uncommon case of arrested development. The mother of this interesting specimen was the wife of a farmer, and had already given birth to several healthy children at full term, and all well formed. On this occasion the labour was natural, and she was delivered of a large male infant, possessing the following peculiarities:—The right ear or, to speak more technically, auricle was altogether wanting, nor was there even a depression in the spot usually occupied by it. The right eye was also entirely absent, the position of the orbit being indicated merely by a slight depression, while on the left side the orbit appeared to contain an eyeball completely concealed, however, by the eyelids, which were intimately united along the whole line of the palpebral commissure. I observed also the presence of double hare-lip and cleft palate, and, what is very unusual, the tongue was totally wanting, its place being occupied by a small, conical, fleshy projection. The trunk and genitals were those of a large, well-made, male infant, but the limbs presented the following peculiarities:—On the right side the arm and forearm were absent, but from the head of the scapula there hung, suspended by skin only, an

appendage which appeared to be an abortive hand. The left upper extremity was normal in size and shape, but the fingers were united by a web of skin extending between each. The lower extremities presented no peculiarity except a similar webbed structure extending between the toes, and this was present on both feet.

When she was three or four months pregnant, a cow belonging to her husband gave birth to a calf which wanted the right ear, the right eye, and both forelegs. This extraordinary object was watched by her with great assiduity, and she superintended its feeding and endeavoured to rear it. It lived for several months; and the occurrence is supposed to account for the extraordinary object of which she was herself afterwards delivered. It was born alive, but only survived a few hours. Its head was thickly covered with black hair. On the right side there was nothing at all to indicate the position of the ear. The birth took place after the full period of utero-gestation.

DR. KIDD.—The interesting point of the case is the connexion between maternal impressions and foetal deformities. As far as I can gather from the description, the connexion is more intimate and marked than in any other case that I ever met with. At the same time it does not convert me to a belief in the connexion between maternal impressions and foetal deformities. As a rule the deformities present very little resemblance to the object that caused the impression; but here it would appear that the calf was born with the right ear and eye absent, and with the forelegs also absent, and that the child was born with an ear absent, the right eye absent, and from one scapula a defective arm or mere hand extending. The weak point in all these cases almost has been that the maternal impressions have occurred at a time when the foetus was far advanced in development—I mean that in many cases the woman meets with the shock or fright, or something that is supposed to produce the maternal impression, in the sixth, seventh, eighth, or even ninth month of her pregnancy, and at a time when the limbs of the child are fully developed, and we are compelled to believe that the deformity has been produced at a time long anterior to the date of the impression. In this case, however, the impression seems to have been made at a very early stage of her pregnancy. I do not pin my faith to the doctrine of maternal impressions, but it is worthy of remark that the facts of this case are stronger than those of most other cases of the kind on record.

DR. MORE MADDEN.—I have seen a good many cases of monstrous births, and in every case I have questioned the mother, and there was always—rightly or wrongly—a history of some previous impression made on the mother while she was carrying the child. Whether or not the woman having got that idea, her imagination might not have thus become excited and exercised an influence during the subsequent period of her

pregnancy, I cannot say. A remarkable case came under my notice some years ago. While I was Assistant in the Rotunda a gentleman came there and asked me to get him a nurse for a deformed child. He was an officer, and brought me to see the child, which was his own. It had no arms, the palate was cleft, and on one side there was a good eye, but on the other a rudimentary one. The child was about a month old. He told me that while at Aldershot he drove out one day with his wife, who was then in the early stage of pregnancy—about the third or fourth month, as well as I remember. A beggar, professing to have been frost-bitten in the Crimea, and who had lost his hands and one foot, was sitting on the roadside. He asked for alms, and not satisfied with that followed and called after them; and the gentleman, annoyed with his shouting, made a cut at him with his whip. His wife begged of him not to do so, but she kept talking of the incident afterwards, and could not get it out of her mind.

DR. HENRY KENNEDY.—There are a great number of cases on record in which deformities in the child have followed the action of the mother's imagination before birth. In an admirable paper the late Dr. Montgomery showed how children are born wanting arms; and the late Dr. Graves traced deformities to the mothers having been to a considerable extent shut out from the light of day during pregnancy. Imagination, even in ourselves, is capable of doing a great deal.

The CHAIRMAN.—While we have many apparent coincidences between deformities and previous impressions and shocks, we have hundreds of cases on record in which the deformities could not be traced to any such cause. The case of to-night is one of the strangest I ever heard.

DR. DOYLE.—I attended a young woman in three or four of her confinements who was married to a man who had a club foot. Her first baby had a limb the same as that of its father. Then she had two successive children whose limbs were perfect. The husband was of a jealous disposition, and said to his wife during her next pregnancy, "If the child you are carrying be not deformed the way I am, it is not my child." That child was born with a club foot. Within the last two or three years I have had cases of children with strawberry and other marks, but there were no traces of maternal impression. Having regard to the shocks which all pregnant women must meet with, it is wonderful how many children are born without being deformed.



## PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—ARTHUR WYNNE FOOT, M.D.

Secretary—E. H. BENNETT, M.D.

*Cancerous Ulceration of the Stomach.*—DR. W. G. SMITH said: These specimens were taken from the body of a coachman who died in the Adelaide Hospital on the 21st of last October. The history of the case, taken from Mr. Hull's notes, was this:—He had never been seriously ill up to about six years ago. He used to drink regularly, taking four glasses of whisky in the day, with ale and porter *ad libitum*, but he was never drunk. He felt well enough until about three months ago, when one day he got a chill. He went home and took some hot punch, and seemed to recover. All appeared to go well till six weeks later, when one day he took ill after dinner. On the following day, feeling weak, he lay down. After that he complained of pain, which was relieved by eating food. The pain commenced on each side of the epigastrium and extended along the abdomen, and went up between the scapulæ. When examined in hospital the abdomen was tender under pressure. No tumour or swelling was to be felt in the epigastrium. The liver and spleen were about the normal size. He was able to eat meat till the 13th October.

The cause of death was asthenia. I thought it interesting to examine the urine to see if there was any trace of indigo-forming substance. I treated the urine by Jaffé's method—*i. e.*, added half its volume of strong hydrochloric acid, and then solution of chloride of lime, cautiously, drop by drop.

DR. WOODHOUSE considered that it was a question for careful consideration how far the presence of indigo in the urine could be deemed a symptom of disease at all. Experiments he had seen made by Dr. Harvey and his pupils in the Whitworth Hospital show that an examination of the urine of many patients in the hospital betrayed the presence of indigo.

The CHAIRMAN said that he had at one time corresponded with a doctor in London on this subject who considered that there was no good end to be served by testing urine for indigo as a means of diagnosing a disease, as every urine had indigo in it.

DR. FINNY, with reference to the patient's appetite for meat so soon before death, mentioned a case that had come under his notice, where the patient had died from hæmorrhage, and on the day of his death he asked for more meat than usual.



DR. NIXON mentioned a case in hospital where the patient had had repeated attacks of hæmatemesis, and suffered from loss of blood, pain, and vomiting. After trying a number of things to relieve the vomiting he asked to have a mutton chop given him. In consequence of what the man said Dr. Nixon ordered the meat, and he lived for a considerable time taking meat for dinner.

DR. SMITH, in reply, said he did not think the presence of indigo in normal urine should preclude a search being made for it, as a means of determining the existence of disease, if the indigo were found in more than ordinary quantity.—*November 27, 1880.*

*Fractures of the Posterior and Middle Fossæ of the Base of Skull from direct Injury.*—DR. E. H. BENNETT said: This specimen was taken from the body of a man who died on the 1st of last August. He was admitted to Sir Patrick Dun's Hospital at half-past six o'clock on the morning of July 31st. He had been kicked by a horse on the head. His condition on admission was one of profound collapse. He was bleeding from both ears, chiefly from the left. He had also bled from the nose. The pupils of his eyes were contracted. On the left side there existed, beneath the mastoid process, a transverse wound about an inch and a-half long, and considerable bruising over the left orbit, but there was no subconjunctival ecchymosis. His pulse was 60; his breathing slightly stertorous. He was quite unconscious. At 10 o'clock his pulse was 44; temperature, 95·2°. His right leg responded to tickling of the sole, the left leg did not. He resisted with the left arm attempts to make him drink. He could hardly be made to swallow, and fluid placed in his mouth was ejected. His right side was paralysed, and his face showed marked paralysis of the portio dura of the seventh pair on the left side. At 4 30 p.m. the temperature had risen to 98°, the pulse to 60. Both legs responded to tickling. It was then considered that he was suffering from severe compression of the brain. In addition to this the pillow was wet with serous fluid flowing from the left ear. At 10 o'clock the next day his temperature was 99°. He lay on the right side throughout the first day, and remained unconscious. On the following morning the pulse and temperature began to rise; in the evening the temperature was 101°, the pulse 112. Breathing more stertorous. The only change noticeable in his condition was, that while on the first day the left arm had resisted any attempt to give him drink, it was now quite rigid and immovable. He had been bleeding from both ears; and from the direction of the force and its point of application it was easy to judge that he was suffering from fracture of the base of the skull. He died at 11 p.m. on this day.

The injury occurred thus:—The man was engaged at his work close by a stable, and was standing with his back towards a horse which was

being harnessed; the animal, a vicious brute, lashed out when the harness was brought near it, and struck the man at the full length of her kick, thus striking almost directly upwards; the blow took effect on the man's head below and behind the left ear.

On dissection three distinct fractures of the base of the skull were found, as well as a simple fissure independent of these injuries, passing from the posterior and lateral region upwards across the vertex through the parietal bones. The fractures of the base were each marked by displacement of bone into the cranial cavity—the first and most displaced a fracture of the upper surface of the petrous bone, in which the roof of the middle and internal auditory cavities had burst into the brain cavity, rupturing the dura mater and tearing the middle lobe of the cerebrum deeply; the bone remained displaced, but not to the degree which had occurred at the moment of the accident, for a little piece of the roof of the ear chamber was detached and lay fully half an inch beyond the projecting piece on the inner surface of the dura mater. The second fracture of the base was placed in the cerebellar fossa, and at it the bone projected sharply inwards, just behind the sigmoid fossa, which lodges the lateral sinus as it passes to the jugular foramen. This fracture pierced the membranes and wounded the cerebellum; from it a radiating fracture passed forwards through the jugular foramen along the limits of the petrous bone to the body of the sphenoid, passing into the orbit and across into the sella turcica. The third fracture displaced a portion of the foramen magnum slightly inwards, being a fissure with displacement of its posterior side. These three injuries corresponded externally, the first to a vertical fracture of the mastoid bone, with displacement of its sides and a fissure extending into the external auditory meatus; the second to a sharply-defined fracture of the jugular eminence and the bone posterior to it, reaching to the posterior condyloid foramen; the third to a less-defined contusion of the bone and soft parts involving the attachments of the muscles into and between the curved lines of the occipital bone. To read these strangely-placed lines of fracture aright it was necessary to place a horse-shoe against the skull, when it appeared that the toe of the shoe corresponded to the second, the outer edge of one limb of the crescent to the first, and the opposite limb of the crescent to the third. Lastly, the fissure of the skull passing to the vertex and across the middle line, which is distinct from all the other fractures, is seen, the horse-shoe in place, to originate in a limited stellate fracture, which corresponds to the inner side of the curve of the shoe, and from this ascends the fissure to the vertex. On the inner side of this fissure a great blood-clot compressed the brain, placed between the bone and dura mater, the result of a laceration of the posterior branch of the middle meningeal artery. To this clot the fatal pressure on the brain was due, although of course the other injuries had their share in the fatal issue. Had trephining been possible in this

case the application of the instrument would have been made, following the external indications, over depressed fractures no doubt, but entirely remote from the real source of pressure.—*November 27, 1880.*

*Recurrent Mammary Carcinoma.*—DR. KILGARRIFF said: I have the honour to exhibit to the Society a small tumour which I removed from the breast of a lady on last Monday week.

The history of the case is briefly this:—About three years ago she noticed the existence of a small kernel on the inside of the nipple of her right breast. She sought medical advice, and was informed that the swelling was of a harmless character, and would disappear under the influence of suitable medicines and local applications. It continued, however, to grow and become painful—the pain radiating from the centre of the tumour and extending to the shoulder. She was not satisfied with the assurance she received, and on last June twelvemonths consulted me. On examination I found a tumour extending from about two inches outside the right nipple to within an inch of the sternum. The swelling was elliptical in shape, the long axis taking a transverse direction. It was firm to the touch, and resisting as a flattened paving-stone. It was adherent throughout. There was no retraction of the nipple, nor were any lymphatic glands implicated. I concluded that it was a carcinoma, and advised its removal.

I operated, and in the removal of the mass had to take away some of the pectoralis major, and towards the inner side I had to scrape away from a few ribs and their cartilages some thickened tissue. The wound healed quickly. She returned home, but presented herself to me for inspection once a month.

Three weeks ago I found a small hard growth occupying the inner part of the cicatrix, and extending a short distance above and below; it was not adherent. I removed the tumour, and the wound healed in a few days. The original tumour and the recurrent one were examined microscopically by Dr. Coppinger, and the section which I saw myself proved the specimens to be undoubtedly scirrhus. This case will, I hope, encourage surgeons to remove these secondary growths promptly, and with a fair expectation that the wound will heal, the life of the individual be prolonged, much pain and discomfort averted, and even the further recurrence of the disease prevented.—*November 27, 1880.*

*Enteric Fever without Disease of the Glands of the Ileum.*—DR. J. W. MOORE said: The late Dr. Murchison, in his classical treatise on the "Continued Fevers of Great Britain" (second edition, page 612), described "the specific lesions" of enteric fever, "which," he said, "*are invariably present*, and which consist in a disease of the agminated and solitary glands of the ileum." He added (page 625):—"The morbid

appearances presented by the agminated and solitary glands of the ileum are *constant in*, and peculiar to, enteric fever. '*Il faut,*' says Louis, '*non seulement la considérer comme propre à l'affection typhoïde, mais comme en formant la caractère anatomique, ainsi que les tubercules forment celui de la phthisie.*'" When such eminent authorities as Dr. Murchison and Prof. Louis have thrown the weight of their opinions into the scale in favour of the view that the intestinal lesions of enteric fever are *invariably* present, one may well shrink from the attempt to dispute the point. At the present day, however, it is almost universally conceded that enteric fever is an essential disease, its secondary intestinal lesions standing to it in the same relation as the rash and sore throat of scarlatina do to that disease. It would, therefore, seem only rational to conclude that cases of enteric fever may occasionally occur in which there is no disease of Peyer's patches and the solitary glands of the ileum. I beg to submit the specimens now before the Society in support of this view.

The parts were removed from the body of a girl aged twenty-two years, who was admitted to hospital on the eighth day of fever. Her pulse was slightly over 100, the respirations being in due proportion; the axillary temperature ranged from 101° or 102° in the mornings to 104° in the evenings. She had moderate diarrhœa, the motions being fluid and of an ochrey colour. On the eleventh day of her illness the spleen was found to be much enlarged, and numerous taches bleuâtres were noticed across the back. There were a few scattered rose-spots on the chest and abdomen. No marked abdominal symptoms were present. After the fourteenth day the temperature began to fall gradually, while the variations between the morning and evening observations became more pronounced, amounting to four or five degrees. Diarrhœa ceased on the eleventh day. The patient was apyrexial on the twenty-fourth day. On the evening of the twenty-fifth day the temperature began to rise again, reaching 102·8° on the twenty-ninth evening. It then once more subsided, and became normal on the thirty-third day. This second fever was regarded as either (1) septicæmic, or (2) due to a severe attack of toothache, which caused much suffering with loss of sleep. Early on the morning of the thirty-fifth day a shivering fit ushered in a third fever, which unhappily proved to be maculated typhus, a disease then very prevalent in the hospital. On the third day of this new illness a copious crop of pink maculæ, closely resembling rose-spots, appeared all over the body and on the extremities. The temperature chart was that of a typical case of typhus. On the tenth day croupous pneumonia of the right apex set in, and to this complication the patient succumbed on the morning of November 24, being the fourth day of the attack of pneumonia, the thirteenth day of typhus, and the forty-seventh day from the onset of enteric fever. Some twelve hours before death the temperature rose to 105·8° in the axilla.



As may be seen from the specimens on the table, there is croupous pneumonia of the right apex, with some localised pleuritis. The spleen is extremely large, soft, and friable. It is in a condition of *putrilage*. There was no peritonitis.

The ileum was carefully examined. In places the mucous membrane was congested to the extent of two or three inches; but there was not the slightest trace of past or present disease of the agminated or solitary glands. Peyer's patches were perhaps less distinct than usual, but otherwise they were perfectly normal. They were not hyperæmic, did not present the "shaven-beard" appearance, or any signs of cicatrisation, ulceration, or even *engouement*. The mesentery was unfortunately cut away in removing the intestines, but the mesenteric glands do not appear to have been enlarged.

It is no doubt true, as Murchison says (*loc. cit.*, page 616), that "the enlargement of the intestinal glands does not of necessity lead to ulceration. The morbid products to which the enlargement is due may be re-absorbed, absorption commencing about the tenth or twelfth day of the disease, and by the end of the third week being complete." Yet in the present instance, where the enteric fever ran a course of twenty-four days—the average duration of enteric fever—where death was brought about by croupous pneumonia—as rare a complication of typhus as it is common in enteric fever, and where after death the spleen was found so characteristically enlarged and softened, it is surely unreasonable to assume that the glands of the ileum had been diseased at an early period of the fever, but had subsequently undergone resolution so as to completely regain their normal appearance. It would be more philosophical to say, with Dr. Stokes,<sup>a</sup> "that no form of fever has any special anatomical change, and that where such does take place it is of a secondary character." "The lesions of the abdominal organs in fever are—not the cause—but the result of the essential disease."<sup>b</sup> The same learned physician writes:<sup>c</sup>—"Looking at fever in a wide sense, we may safely hold that these secondary anatomical changes are inconstant in their amount, in their nature, and even in their seat; inconstant as to their time of appearance, their symptoms, their intensity, and their decadence; and utterly incompetent to explain the phenomena of the disease."—*November 27, 1880.*

<sup>a</sup> Lectures on Fever. Page 238. Longmans, Green, & Co., London. 1874.

<sup>b</sup> Ibid. Page 248.

<sup>c</sup> Ibid. Page 36.

# TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

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SESSION 1880-81.

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President—J. WALTON BROWNE, B.A., M.D.

Hon. Secretary—WILLIAM WHITLA, M.D.

*First Meeting.*

PROFESSOR DILL, M.D., in the Chair.

*Ex-President's Address.*

PROFESSOR DILL, M.D. (ex-President), said: Gentlemen,—Before retiring from this chair, and from my position as President of the Ulster Medical Society, to which I had the honour of being elected a year ago, allow me to thank you for the honour then conferred, as well as for the uniform kindness which you have so graciously and generously bestowed upon me throughout the session. To occupy such a position—elevated to it as I was by the unanimous suffrage of the Society—is a dignity which I much appreciate, and an honour of which any member may be justly proud, especially when we consider that it is the highest compliment which the Society has in its power to confer; and I shall ever retain a grateful recollection of the hearty feeling with which your vote was accompanied, which encouraged me much in accepting of the office and of this high trust. At the same time I am free to state that I believe it was not because of any special work done by me for the Society, but it was due to the fact that I am among its oldest members, and that I had been taking an interest in the business and prosperity of the Society.

I may be permitted here to call to mind that this Society was called into existence something more than sixty years ago. Consequently it has survived what may be considered at least as two generations; and now that we are about to enter upon its sixty-second, if not its sixty-third, session, it does so, not in the infirmity or decrepitude of old age, but with as much vigour and vitality and with as much disposition for work as any previous session was ever entered upon. And why, may I not ask, should this not be so, when we have met here to-night for the purpose of installing your President-Elect, from whose young heart and cultivated intellect must flow forth an influence and force which cannot fail to inspire the whole body for work down to the most remote of its members? At this period in the history of this Society one might feel tempted to compare the state of medical knowledge as it

now stands with what it was when it first sprung into existence, but to sketch this thoroughly would require a master-hand and more leisure than I am able to command, so I leave to another the accomplishment of this great and important task. I may, however, be allowed to indicate briefly a few of the points of interest wherein the differences are found to exist between the present and past, and in doing so I think I am correct in stating that obstetric medicine and gynæcology have not been behind in the race. On the contrary, give me leave to say that these departments have made more progress than either of the sister branches—viz., medicine and surgery. This, it will be admitted, is all the more extraordinary when we find that midwifery, including in that term gynæcology and diseases of children, has always been allowed to occupy the shady side of the profession—indeed we would be safe in asserting that it has been treated as the stepchild of medical science, and even yet it has not had that recognition to which its friends consider it is but justly or fairly entitled.

The other two departments—viz., medicine and surgery, have flourished under the fostering care of men of science and wealthy institutions, and whilst they have been thus out of proportion sustained, midwifery, it must be admitted, was long left to languish and to struggle through a very feeble existence. You will, therefore, scarcely be prepared to hear that, with all these disadvantages, obstetric medicine and surgery have made more progress and have advanced more rapidly than either of the other departments; and if I prove this, I think you will then admit that I am justified in claiming for it more attention, as well as a higher position, than it has been favoured with as a branch of medical study and practice. Having said so much, you will naturally ask in what does this progress, or in what do these additions and improvements, consist within the last forty years; and while I am advancing a few facts to sustain my assertion, I am fully conscious that most of the gentlemen I address are as familiar with them as I can possibly be. But, even with all this, a rehearsal may, without any disadvantage, be occasionally indulged in. Whilst I undertake to direct your attention to the great progress which has been made within the period specified, I shall not be unmindful of the value of your time or of your anxiety to hear the address from the President-Elect. I shall, therefore, confine myself to little more than a syllabus—a mere indication of the work which has been done—and first let me say that we have a more accurate knowledge of menstruation, conception, and generation than was possessed forty years ago. We have more correct views at present of the structure of the ovum—its progress, maturation, and process of expulsion—in other words, the mechanism of labour, otherwise parturition. We have now a tolerably correct knowledge of the spermatozoon influence, the penetration of the ovule, with a more correct knowledge of the use of the

fimbriated extremities of the Fallopian tubes, seizing as they do the ovary, receiving the ovule, by which it is conveyed to the uterus, its nine months' resting place, and during which time it undergoes a wonderful development. We now possess a knowledge of the true changes which take place in the Graafian follicles. The growth of the embryo in utero has received much attention, and is now tolerably well understood. The characters and the conditions of the *decidua uteri* occupy different positions now, so that our knowledge here is fixed upon a better basis than formerly. There has been much time and careful research bestowed by Goodsir upon the anatomy, the physiology, and the pathology of the placenta, so that now the uses, the mode of circulation, and the diseases of this organ are tolerably well understood, with much practical advantage to the well-being of both the mother and the child, as well as in regard to the causes of the death of the foetus in utero, which may be now easily diagnosed and accounted for.

The displacements of the uterus, which have of late received such marked attention at the hands of Hodges, Thomas, Graily Hewitt, &c., are now well understood, and by the means which they have suggested and recommended, can be easily and successfully put right.

Vesico-vaginal fistula, which was at one time the opprobrium of the obstetric art, is now not only in many instances prevented by our better management of labour, but, when unfortunately it does occur, it can, thanks to Marion Sims, be subjected to successful treatment.

The mechanism of labour, so interesting indeed, so fascinating a study in itself, has been placed before us in such a clear and intelligible form by the achievements of Baudelocque, Naegele, and Leishman, that we follow it with care, and take advantage from a knowledge of it in the management of labour.

What shall I venture to say of anæsthetics and their marvellous influences for good in labour, and wherever pain is found to exist? And are we not indebted to Simpson, the great accoucheur, in particular for this magnificent additional resource to our art, and inestimable boon to suffering humanity? I need not dwell on what is so well known to you all—viz., the better management of the different stages of labour which has been effected within the time mentioned.

I do well remember that where cases of placenta prævia were, when met with, much dreaded, now they are faced and treated with self-possession, clearness, and precision, and, as I have shown on a former occasion to this Society, with greater success as regards the life of both the mother and the child.

Long within the time of which we speak, has not the after-treatment of labour undergone a complete metamorphosis or change as regards nourishment? Formerly it consisted in starvation, now it is quite the opposite; yet, with all this, I still prefer (though not exactly to the same



extreme) offering nourishment in a light form and in a sparing manner for a few days after labour; but I would add that each case must be treated in this respect according to circumstances.

Braxton Hicks' improved method of version by internal and external manipulation—in other words, as it has been called, the bipolar and bimanual mode of version, has been favourably received by the profession, and I have practised it in certain cases with ease to myself and greater safety and advantage at least to the mother.

In the presence of such a number of experts I would be slow to dilate upon the use of the midwifery forceps, or to say more than a word in regard to the increased and increasing use of this instrument. The more frequent use of the forceps has certainly been the means of relieving the mother from the long, indeed the very protracted, labour from which she was allowed to suffer in former times, but with its earlier use there is greater safety to the life of the mother and her offspring.

The cephalotribe is an instrument of modern invention, and is a valuable addition and improvement upon the old crotchet in bringing away the foetus with more ease and safety to the mother.

The toxæmic condition has received much consideration by Frerichs, Lever, Simpson, and Braun. But perhaps I should, in introducing this subject, have begun by directing attention to Bright's researches regarding the uræmic origin of puerperal convulsions, or true puerperal eclampsia. Through their labours this very formidable complication of labour is tolerably well understood in its chemico-physiological and pathological characteristics, as well as in its therapeutical requirements.

I can now do but little more than mention the names of some other diseases—viz., phlegmasia dolens, thrombosis, embolism, and, more especially, puerperal fever, as having had of late much more light reflected upon them, and, through them, upon the general puerperal condition.

The last-named disease is now recognised as a form of septicæmia—in other words, this disease is believed to originate with blood-poisoning, and that the poison may be absorbed into the system either from within or from without—that is, either auto-genetically or hetero-genetically. With this disease the study and history of the antiseptic plan of treatment have been very intimately associated, so that the decomposition of the coagula *in utero* has received marked attention and has led to a knowledge of the influences of septic poisoning and of antiseptic injections.

The use of the speculum, uterine sound, uterine dilator, sponge-tents, laminaria, hydrostatic uterine dilators—associated as these instruments are with names of the highest standing in medical science, such as Simpson, Priestley, Barnes, Wilson, and Marion Sims—have been well received, and have introduced a new era in the diagnosis and treatment of uterine diseases.

What shall I say of Spencer Wells and Thomas Keith, who occupy such a prominent position before the profession and the world? for do we not stand in perfect amazement and fascination while we contemplate their magnificent achievements in ovarian diseases and their brilliant successes in ovariectomy—creating as they do a halo around their names while they live, and which will embalm their memories into perpetual spring?

May I be allowed to speak of such men as the Brobdingnags of medical science, at whose feet we, their Liliputian brethren, should sit, and, looking up, listen and acquire knowledge and intellectual strength, so as to enable us to grow up into the full stature of the perfect man.

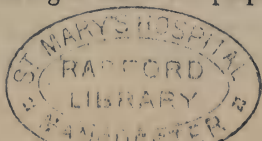
Time would fail me to speak of many other important improvements and aids to midwifery as they deserve, such as ergotine, perchloride of iron, bromide of potassium, and chloral hydrate.

The alternative operations for craniotomy should be also here mentioned to show you that this department of our art has not been stationary during the last forty years. These operations are—öophorectomy, hysterotomy, and laparo-elytrotomy.

Although foreign, to some extent, to the subjects under consideration, I had intended expressing a few words on the advantages that we in common with the other branches of medicine have derived practically from the use of the thermometer, the microscope, the aspirator, the spectroscope, the ophthalmoscope, the laryngoscope, and the sphygmograph, which are all instruments of precision, and in the hands of scientific men have yielded some most important and extraordinary results in clinical and pathological investigations. Had time permitted I could have adduced a few facts which would be considered as very striking in the accuracy with which we may by the use of some of these instruments not only diagnose disease, but also distinguish one disease from another; I forbear, however, as I ought rather to apologise for taking up already so much time in “telling you that which you yourselves do know.”

In drawing these hastily written remarks to a close, will you allow me to say that, let the astronomers vaunt their Copernicus, the natural philosophers their Galileo, the mathematicians their Pascal, the geographers their Columbus, we will worship at the shrine of a Hunter or a Harvey.

From all that has been stated I think I am justified in the conclusion that “the proper study of mankind is *woman*.” I beg to introduce to you Dr. J. W. Browne as President for the year, who, I have no doubt, will try to verify the old dogma—viz., that “doctors differ,” and attempt to prove that the correct rendering is that “the proper study of mankind is *man*.”



# HALF-YEARLY REPORT OF THE BELFAST SKIN HOSPITAL.

By H. S. PURDON, M.D., Physician to the Hospital.

DURING the six months ending December 31st, 1880, 606 persons suffering from various forms of skin diseases were treated at the Hospital for Diseases of the Skin, Belfast, making a grand total of 14,026 during the 15 years the charity has been in existence. The following are the diseases, arranged in alphabetical order:—

Acne Vulgaris	-	-	25	Nævi	-	-	-	2
Alopecia Areata	-	-	30	Onychia	-	-	-	1
Callosities	-	-	2	Pemphigus	-	-	-	1
Carbuncle	-	-	2	Pityriasis Capitis	-	-	-	4
Ecthyma	-	-	7	Pruritus Ani	-	-	-	3
Eczema, including Lichen and				Psoriasis	-	-	-	31
Impetigo,	-	-	315	Purpura Hæmorrhagica	-	-	-	1
Elephantiasis Arabum	-	-	1	Scabies	-	-	-	43
Ephelis	-	-	1	Scrofuloderma	-	-	-	25
Erythema	-	-	20	Sycosis	-	-	-	2
,,    nodosum	-	-	6	Syphilis	-	-	-	15
Favus	-	-	2	Tinea Circinata	-	-	-	10
Herpes	-	-	6	,,    Tonsurans	-	-	-	5
,,    zoster	-	-	3	Tumours, encysted	-	-	-	3
Keloid of Alibert	-	-	1	Ulcers	-	-	-	18
Kerion	-	-	5	Urticaria	-	-	-	2
Lupus Vulgaris	-	-	10					
,,    Erythematosis	-	-	4					606

Out of this number 23 persons were admitted into the wards. Duration of patients in hospital, from 3 days (the shortest) to 20 weeks (the longest). The majority of the patients resided in Belfast or immediate neighbourhood, as shown in the following table, and only the most urgent cases were admitted into the wards. Our splendid suite of baths were largely used, especially the Turkish bath, for many chronic cases. As nearly as possible the patients were noted to have come from the following localities:—

Belfast and neighbourhood,				County Westmeath	-	-	-	1
including County Antrim	-	-	552	,,    Dublin	-	-	-	1
County Armagh	-	-	10	London	-	-	-	1
,,    Derry	-	-	5	Liverpool	-	-	-	2
,,    Down	-	-	28	Glasgow	-	-	-	3
,,    Tyrone	-	-	2					
,,    Louth	-	-	1					606

I have nothing new to offer in way of treatment. For acne I am using, with benefit, glycerine internally, as suggested originally by Gubler—a substance so analogous to oils, and, like them, following the ordinary modes of elimination, in traversing the sebaceous follicles; whilst locally, if on the face, my friend Dr. Samuel Moore's (Glasgow) ointment of sulphur and green iodide of mercury, is the most useful application I know of. Acne, in young men and girls, often attacks the shoulders. Here, sponging with sea-water and brisk friction with a rough towel is far over ointments or lotions. For parasitic affections due to vegetable growths, croton-oil liniment, by producing suppuration, destroys the growth more rapidly than any of the vaunted parasitocides. The solution of the ethylate of sodium I still use in nævi, small warty growths, and some forms of lupus, although Volkmann's spoon is the best means of quickly curing the patient. For lupus erythematosus the local application of liquor potassæ has given me good results, whilst internally, in the acute stage, large doses of acetate of potassium relieve the congestion, and in more chronic cases I prescribe Thompson's solution of phosphorus. In chronic psoriasis I think there is nothing to equal either cold or tepid "packs," as used at the hydropathic establishments.

As our Hospital is gradually becoming better known and more appreciated and supported, we hope to extend our operations—especially as regards opening new wards and keeping up our full complement of beds, at least twenty, free.

*Away with the Spray!* By PROFESSOR V. VON BRUNS, of Tübingen.  
Translated from the *Berliner klinische Wochenschrift* for 25th October, 1880, by H. R. SWANZY, F.R.C.S.I.

THE majority of practical surgeons at the present day employ a carbolic, thymol, or other favourite spray during operations and while dressing operation cases, &c., and regard it as a necessary part of the antiseptic treatment of wounds. Some even go so far as to regard the interruption of the spray for a second during an operation, as a serious mistake which may frustrate the entire result of the antiseptic method which has been carried out with precision in all its other details.

I must confess that, from the time Lister's method first became known, I was very sceptical as to the use and necessity of the carbolic spray, and hesitated before adopting it regularly in operations. What persuaded me to employ it was the desire to protect my hospital from any reproach attaching to the neglect of so important an agent rather than a belief in its utility. As time wore on, my doubts of the power of the spray increased and strengthened, and finally, after a careful study of the works of naturalists bearing on the subject, especially that of C. von Nägeli,<sup>a</sup> I

<sup>a</sup> C. von Nägeli. *Die niederen Pilze*. Munich, 1877.



have come to the conclusion that, theoretically, the utility and necessity for the employment of the spray in operations is not sufficiently proved, and that it must be regarded as a useless addition to the antiseptic treatment of wounds.

Accordingly, as I became more and more convinced of this, I endeavoured to gain experience which would enable me to form an opinion, apart from every theory, as to the use or uselessness of the spray, and in the course of the year 1878 I gave it up in an ever-increasing number of operations. To this I briefly referred in my work on "*Amputation by the Circular Incision and Anterior Skin Flap.*"—Tübingen, 1879. After describing the spray producer used in my hospital, I say (p. 31)—"Of late, however, I have frequently amputated without the carbolic spray, because I do not recognise its utility, as reported, for killing or rendering innocuous the bacteria, which may fasten on the wound during the operation, and experience has not shown me its use in any other respect, while on the other hand the employment of the spray is attended with many inconveniences which one would rather avoid."

Since that time—namely, the spring of 1879—I have completely banished the spray from my hospital for all operations and dressings, and the experience in the institution since then has afforded me complete proof of the correctness of my proceeding. The results of all the greater operations, which are performed elsewhere under the spray, but here without it, are so favourable not only as regards mortality, but also in respect of the course and duration of the healing process, that none better have as yet been reported from any hospital. They are quite sufficient to afford the empirical proof of the efficacy of the antiseptic treatment of wounds without use of the spray, and to justify me in the following decision:—The employment of the spray in surgical operations is not only unnecessary and superfluous, but also a disagreeable and disturbing addition, and should therefore be omitted.

The immediate grounds of this, as I am well aware, at the present day, most heretical opinion, I shall give in a paper which will shortly appear upon the antiseptic method which is employed in my hospital, and I shall now merely offer the following short notes as a preliminary communication, but which will probably contain matter-of-fact proof enough for the first part of my above decision. For the second part no proof is required, for every surgeon will agree with me in it. Numbers alone can afford the proof for the correctness of my proposition with regard to the superfluity of the spray, and the statistics of my hospital are large enough and extend over a sufficient period of time to be regarded as conclusive even by the supporters of the opposite view.

From the great number of operations performed in the hospital during the last two years, I shall merely now refer to the operations on bones—that is to say, osteotomies, resections, disarticulations, and amputations.

Not only do these operations form a well-defined group, which, apart from operations on the bones of the face with opening into the mouth, are elsewhere performed under the spray, but they also include those operations which formerly contributed chiefly to the mortality in surgical hospitals from so-called accessory wound diseases—pyæmia, septicæmia, and erysipelas—a mortality to have effected a vast diminution of which is Lister's uncontested and eternal merit.

I may say that in place of a continuous spray I employ temporary irrigation, or watering with a two to five per cent. solution of carbolic acid for a few seconds at a time. In protracted operations the cut surface is washed several times with a two per cent. solution of carbolic acid; in other operations this is done at the conclusion only. Moreover, every unhealed surface, if not quite too extensive—*e.g.*, the inner surface of a pleural cavity which has been opened into, or of an abscess which has been evacuated—is washed out with a stream of carbolic acid solution (five per cent.); and the same proceeding is adopted in amputations after the edges of the flaps have been brought together, should any further hæmorrhage have occurred—the drainage tubes being employed as the means of access for the carbolised stream.

In the same way in all dressings of wounds no spray is used, but merely irrigation with a two per cent. carbolic acid solution. In other respects the usual rules of the antiseptic treatment are strictly carried out, and especially the use of carbolised gauze, prepared according to my son's method.<sup>a</sup>

I regard the dressing of the wound as seldom as possible as of special importance. Thus, after amputations, the first dressing occurs as a rule on the eighth, tenth, or twelfth day. In two complete resections of the knee the dressing applied immediately after the operation was not changed until the twenty-eighth day, and not until the thirtieth day in two other cases.

From the beginning of October, 1878, to the end of September, 1880—that is to say, during the last two years—in the category of operations above referred to, the following have been performed:—

#### I. AMPUTATIONS AND DISARTICULATIONS.

Under this head I, like others, do not include double amputations. There were four of these—namely, one of both thighs, two of both legs, and one of the right thigh and of the left leg. All these double amputations resulted fatally, in the first case from shock four hours after the operation, and in the three other cases from trismus and tetanus.

I may add that the last of these double amputations and its dressing was made under the carbolised spray, until death after fourteen days'

<sup>a</sup> Einige Vorschläge zum antiseptischen Verbande. By P. Bruns. Berl. klin. Wochenschr. 1878. No. 29.

aseptic healing process. I used the spray here simply because the prognosis of the case (one of compound comminuted fracture of both legs with other injuries from a railway accident) made me anxious to take from the supporters of the spray the possibility of saying, "If the spray had been used, the patient's life might perhaps have been saved."

The operations performed under the above head were—

Amputations of the arm	-	-	-	-	4
Amputations of the forearm	-	-	-	-	4
Disarticulations of the hand with preservation of thumb	-				2
Amputations of the thigh	-	-	-	-	12
Amputations of the leg	-	-	-	-	23
Disarticulations of the foot <i>sub talo</i>	-	-	-	-	2
Disarticulations of a finger (usually with resection of the head of corresponding metacarpal bone)	-	-	-	-	4
Amputations of the finger at the first or second phalanx (including a case of amputation of all five fingers of the left hand and three fingers of the right hand)	-				6
Disarticulation of the great toe with resection of the head of the metacarpal bone	-	-	-	-	2
Disarticulation of the little toe with resection as above	-				1
Disarticulation of toes without resection	-				2
Total	-	-	-	-	62

## II. OSTEOTOMIES.

Of these—some simple, some with wedge-shaped excision—there were: On the femur for genu valgum, 7; of these, 5 were at the diaphysis and 2 inside the knee after Ogston; on the tibia 3, of which 2 were at the upper end for genu valgum and 1 at the diaphysis for rickety curvature. Total 10.

## III. RESECTIONS.

We may separate these operations into the following groups:—

### 1. *Resections within Joints.*

Hip	-	-	-	-	-	-	2
Knee	-	-	-	-	-	-	12
Ankle	-	-	-	-	-	-	1
Chopart's joint	-	-	-	-	-	-	1
Elbow	-	-	-	-	-	-	2
Wrist	-	-	-	-	-	-	2
Jaw (both sides)	-	-	-	-	-	-	1
Metatarsal joint of great toe	-	-	-	-	-	-	4
Phalangeal joint of great toe	-	-	-	-	-	-	1
Total	-	-	-	-	-	-	26

*2. Resections outside Joints.*

Partial resection of the 8th, 9th, 10th and 11th ribs	-	1
„ „ 4th and 5th ribs	-	1
„ „ 5th rib	- - -	1
„ „ 6th rib	- - -	3
„ „ ulna	- - -	1
Resection of a pseudo-arthritis at the diaphysis of the tibia	- - - - -	1
Total resection of the cuboid bone	-	1
Total resection of the cuboid bone with the cuneiform bones	- - - - -	1
Wedge-shaped excision of the tarsus for excessive talipes varus (the lesser process and anterior part of the os calcis with the cuboid and scaphoid)	- -	1
Partial resection of the lower jaw for a cyst, without opening into the mouth	- - -	1
Trephining the left frontal sinus	- - -	1
Total	- -	13

*3. Trephining with Spooning out.*

Under this head I group those cases of resections of carious bones in which the existing opening in the compact tissue is enlarged by means of the trepan, and then my sharp spoon passed in through this opening, and with it the diseased cancellated structure removed. This is generally done so thoroughly that the bone is completely hollowed out at the place. Removal of small superficial portions of carious bone I do not reckon. Of such spooning out there were these cases:—

On the head of the tibia	- - -	2
On the os calcis	- - -	3
On the great trochanter	- - -	1
On the trochlea of the humerus	- - -	1
On the mastoid process	- - -	2
Total	- -	9

*4. Necrothecotomies.*

Instead of the usual term for necrosis operations, necrotomy or sequestrotomy, I use the expression necrothecotomy, because in this proceeding it is not the sequestrum which is cut, but rather the necrotheca or sheath of living bone surrounding the sequestrum, which is divided to admit of the dead bone being drawn out. Some of those cases are included in which the sequestrum is not removed in this way, but through an already existing opening in the necrotheca, or where the



sequestrum is simply drawn away when no such sheath exists, and with or without a previous widening of fistulous openings through the soft parts. Of necrothecotomies, and these chiefly of considerable extent, with removal of sequestra sometimes 12 cm. long, there were:—

On the humerus	-	-	-	-	-	2
On the ulna	-	-	-	-	-	1
On the femur	-	-	-	-	-	9
On the tibia	-	-	-	-	-	11
On the fibula	-	-	-	-	-	1
Total						<hr/> 24

If now the totals under each of the above heads be added together, it appears that in the last two years there were in the hospital—

- 62 amputations and disarticulations.
- 10 osteotomies.
- 26 resections of joints.
- 13 resections outside joints.
- 9 trephinations with scooping-out of flat bones.
- 24 necrothecotomies of long bones.

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In all 144 operations on bones.

Not one of all these ended fatally.

Besides these 144 operations, more than 350 other operations were performed in the hospital, without reckoning enlargements of wounds, opening of abscesses, and other small incisions.

The total number of patients admitted to the hospital during these two years was 1,175—a number which, with the present accommodation (100 beds), was considerably below what it should have been, as the alterations which were being made in the hospital caused some reduction in the number of beds in June and July, and the entire closure of the institution in August and September.

The deaths among these 1,175 patients was 36—a mortality of little more than 3 per cent.; but none of these deaths was due to blood-poisoning, whether pyæmia, septicæmia, or erysipelas.

These numbers and facts are surely large and important enough to inspire even the most ardent supporter of the spray with some doubt as to its necessity, and to induce him to make some experiments in operating and in dressing without it.

For myself at least, and I trust also for every unprejudiced mind, no doubt remains, in view of these facts, as to the uselessness of the spray; and I believe therefore I am perfectly justified in the verdict which I have adopted as the title of this communication, and in which I expect before long the majority of surgeons will agree with me.

# SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

## VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday,  
January 29, 1881.*

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhea	
Dublin, -	333,401	776	1022	5	3	25	5	18	53	7	39.9
Belfast, -	174,412	520	487	—	—	5	6	21	11	6	36.3
Cork, -	78,642	166	213	—	4	7	1	9	10	1	35.2
Limerick, -	39,353	58	116	—	5	8	—	1	1	—	38.3
Derry, -	25,242	69	63	—	—	—	2	—	4	—	32.5
Waterford, -	23,349	50	95	—	5	2	—	—	—	8	52.9
Galway, -	15,597	16	35	—	—	—	1	—	3	—	31.7
Sligo, -	10,670	10	22	—	—	1	—	—	2	3	26.8

### Remarks.

As regards the above "Town Districts of Ireland," it is to be noted that two changes were introduced into the Registrar-General's weekly reports at the commencement of the year 1881, which have considerably altered the populations of the large town districts to which these statistics refer. Heretofore the area adopted as the "Dublin Registration District" consisted of the city and suburban districts of Rathmines, Donnybrook, Blackrock, and Kingstown; the area has now been extended so as to embrace the Registrars' districts of "Clontarf and Howth, No. 1," "Coolock and Drumcondra, No. 1," portions of the districts of "Finglas and Glasnevin," and "Palmerston." The other change referred to relates to the provincial town districts for which statistics are given, and consists in the substitution of the "Urban Sanitary District" for the "Registrar's District," or group of Registrars' districts. It has been made with the view of supplying more accurate information regarding

the mortality in towns, the "Registrars' Districts" in several instances containing large rural portions.

The exceptionally cold weather which prevailed from the 7th to the 27th of January inclusive, told most unfavourably on the Public Health. The result is seen in a very high rate of mortality in nearly all the towns. In twenty large English towns, including London, the death-rate was 26·2 per 1,000 of the population annually. It was 25·5 in London, 25·2 in Edinburgh, 31·3 in Glasgow. When the deaths (21) of persons admitted into public institutions from localities outside the district are deduced, the death-rate proves to have been 39·1 per 1,000 annually within the Dublin registration district, and 43·9 within the municipal boundary of Dublin. Zymotic diseases caused 151 deaths in Dublin, compared with a ten-years' average of 173·8 in the corresponding period. Fever was the most fatal disease of this class, being credited with 53 deaths (27 from typhus, 19 from typhoid, and 7 from so-called "simple continued fever"). Scarlatina and whooping-cough were also fatal in Dublin. Fever and scarlatina appear to be widely diffused through the chief Irish towns. Whooping-cough was prevalent and fatal in Belfast and Cork. Diseases of the respiratory organs proved fatal in 321 instances in Dublin, against an average of 230·6 deaths in the corresponding period of the previous ten years. Bronchitis caused 253 deaths (average = 178·6), and pneumonia 35 deaths (average = 28·5). The dependence of these deaths on the inclemency of the weather is well shown by the following tabular statement as to the weekly number of deaths from respiratory diseases and mean temperature of the air:—

	Mean Temperature	Respiratory Diseases in General		Bronchitis		Pneumonia	
		Deaths	Average Deaths	Deaths	Average Deaths	Deaths	Average Deaths
First Week -	40·1	46	57·5	35	44·0	5	7·7
Second „ -	27·7	69	58·4	51	45·0	12	7·4
Third „ -	27·2	90	55·9	74	44·4	6	5·3
Fourth „ -	32·3	116	58·8	93	45·2	12	8·1

At the close of the four weeks the numbers of cases of the principal epidemic diseases under treatment in the chief hospitals of Dublin were as follow—smallpox 10, measles 2, scarlatina 33, typhus 164, typhoid 22, and pneumonia 11.

## METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.,  
for the Month of January, 1881.*

Mean Height of Barometer,	-	-	-	29·914 inches.
Maximal Height of Barometer (on 7th at 9 a.m.),	-	-	-	30·618
Minimal Height of Barometer (on 29th at 9 a.m.),	-	-	-	28·782
Mean Dry-bulb Temperature,	-	-	-	32·8°.
Mean Wet-bulb Temperature,	-	-	-	31·8°.
Mean Dew-point Temperature,	-	-	-	29·5°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·165 inch.
Mean Humidity,	-	-	-	86·9 per cent.
Highest Temperature in Shade (on 1st),	-	-	-	48·3°.
Lowest Temperature in Shade (on 25th),	-	-	-	15·2°.
Lowest Temperature on Grass (Radiation) (on 17th),	-	-	-	14·8°.
Mean Amount of Cloud,	-	-	-	55·7 per cent.
Rainfall (on 14 days),	-	-	-	1·369 inches.
General Directions of Wind,	-	-	-	W., S.E., E.N.E.

*Remarks.*

A very severe month, with much snow and frost. The beginning and close of the month were indeed mild and the weather was open, but there was almost continuous frost from the 7th to the 27th. The mean temperature, deduced from the maximal and minimal daily readings of the sheltered thermometer, was 32·4°, a lower value than that of any month in the fifteen years ending 1880, with the single exception of December, 1878, the mean temperature of which was 32·0°. During the first ten days the weather was governed by an anticyclone, near the centre of which the barometer was unusually high, rising to 30·82 inches in the south of Denmark and to 30·79 inches at Aberdeen on the evening of the 6th. Temperature fell quickly within the district covered by the area of high pressure, so that sharp frost set in generally about the 7th. On the 10th and 11th the anticyclone gradually dispersed, and depressions began to pass southwards across Scandinavia and down the east coasts of Great Britain. Falls of snow and hail now became prevalent, and when the sky again cleared intense frost occurred, the thermometer sinking to 3° at York and to 2° at Nottingham on the morning of the 15th. At 9 a.m. of this day the thermometer marked 17° in Dublin, where a thick rime beautified the trees and shrubs. Next day the highest temperature in Dublin was only 26·0°. In the evening a lunar corona was seen. The following morning a cyclone was fast approaching the S. of Ireland from the Atlantic. As it travelled eastwards up the English Channel it caused a snowstorm of unprecedented violence. In Dublin snow fell in large quantities between 2 p.m. and 9 p.m. of the 17th, the resulting rainfall being upwards of eight-tenths of an inch,



and the snow lay 9 inches deep on the level. The centre of the cyclone was close to Jersey at 8 a.m. of the 18th, and a violent easterly gale with a dense snowstorm raged in the south of England. The frost subsequently returned with great severity. On the 21st the thermometer fell to  $6^{\circ}$  at Parsonstown and to  $-2.3^{\circ}$  at Markree Castle, Co. Sligo. On the 25th the minimum in the city of Dublin was  $15.2^{\circ}$ . Two days subsequently a gradual thaw commenced, which continued to the end of the month. Very little rain accompanied the thaw, and the weather was bright and genial. The atmosphere was foggy on ten days. Snow fell on ten days; hail was observed on eight days. There were deep snow-drifts on the 17th. Ice particles fell on the 23rd. A magnificent aurora borealis appeared on the evening of the 31st.

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## PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

### THE TRANSMISSIBILITY OF TUBERCULOSIS BY MILK.

M. F. PENCH, with the view of throwing light upon this question, has made the following experiments:—Having recognised phthisis in a cow sold for slaughter, and giving 3 to 4 litres of milk daily, he fed two pigs and two rabbits on this milk, managing the feeding thus:—Three young pigs, two months old, of the same litter, were divided into two lots—one consisting of two animals, No. 1 and No. 2, the other consisting only of the remaining pig, termed No. 3, and preserved simply as a standard of comparison. The food of these pigs had been bran, oatmeal, &c., of the best quality. From this time the pigs No. 1 and No. 2 got, every morning and evening, milk taken from the phthisical cow; the animals took it readily. Thirty-five days after the beginning of this experiment, pig No. 1 was killed; he had drunk in this time about 55 litres of the milk. The autopsy revealed no lesion in the digestive viscera; in no part of the intestinal canal was tubercle found; the mesenteric glands were healthy, so was the liver, the spleen, and the kidneys. In the right lung, immediately under the pleura, were found two granulations of the size of a millet-seed, grayish and semi-transparent, which, to microscopical examination, presented all the characters of tubercles. In the left lung three similar spots were found. Pig No. 2 was killed 93 days after this milk diet was begun; it had drunk 276 litres of milk, almost 3 litres a day, and was heavy and fat. At the autopsy, in the liver there was a great quantity of soft, yellow tubercular granulations, irregularly scattered on the surface and in the interior of the organ. There were numerous tubercles in the small intestines and in the mesenteric glands,

and tubercular ulcers on some of Peyer's patches. The submaxillary glands were as large as a hen's egg, and were masses of tubercle. On the surface of the lung beneath the pleura were scattered tubercular nodules, especially towards the diaphragmatic surface. Pig No. 3 was killed on the same day. A single tubercular granulation was found at the end of the ileum, and another near the surface of the liver, and four in the lungs; all the other organs and glands were perfectly healthy. It is worthy of note that this pig, No. 3, the standard of comparison, sometimes got his food out of the wooden bowl that was used for carrying the milk of the phthisical cow, so that the isolation of his food was incomplete. At the same time three rabbits were subjected to a similar test. Rabbits No. 1 and No. 2 were fed on the milk, and got each  $\frac{1}{4}$  litre for 52 days. At the end of this time rabbit No. 1 had only drunk 6 litres of the milk, and finally refused it altogether, while rabbit No. 2 drank it steadily till his death, which took place 130 days from the beginning of the experiment. The cause of his death was general wasting and diarrhœa. Abundant tubercular granulations were found in the course of the intestine, especially in the lower part of the ileum, where they formed, by their aggregation, masses as large as peas, in mesenteric, bronchial, and submaxillary glands, in the kidneys and liver, and the lungs were stuffed with them. Rabbit No. 1, which had only taken the small quantity of the milk, was killed on the 52nd day; the autopsy showed two granulations in the ileum, and nowhere else. Rabbit No. 3, which had been reserved for comparison, and whose feeding vessel had been scrupulously preserved from taint with the milk, was killed, and was found perfectly healthy.—*Revue Médicale*.

#### NEW OPERATION FOR SQUINT.

BOUCHERON describes (*Gaz. Hebdom*, July 9, 1880) a new operation for strabismus, which consists of the following steps:—1. In a vertical section of the conjunctiva and subjacent capsule about 3 mm. from the corneal margin. 2. The introduction of the strabismus hook beneath the tendon of the muscle. 3. Traction of the capsulo-conjunctival flap in one direction, and of the tendon of the muscle in the other, which renders the insertion or pre-muscular adhesion of the muscle to the subjacent capsule prominent, and these are then to be divided. 4. Complete tenotomy of the muscle. 5. Conjunctival suture for closing the wound, or capsulo-conjunctival suture if it is necessary to diminish the effect of the operation.—*N. Y. Med. Journal*, Oct.

#### A VEHICLE FOR SALICYLIC ACID.

A PLEASANT and agreeable method of administering salicylic acid is as follows:—Take of Oswego corn starch one tablespoonful, to be thoroughly rubbed up in several ounces of cold water. Add a quart of milk, set on

the fire, and stir until the mixture has boiled sufficiently to become homogeneous. The addition of sugar and essence of vanilla or lemon will give a delicious blanc-mange. Twenty grains of the salicylic acid can be rubbed up in a mortar with a cupful of the blanc-mange, which may be eaten warm or cold. The acid taste is entirely disguised, and a medicine irritating to a healthy stomach can be safely administered in combination with a nutritious but light food to such patients as are in need thereof.—*Medical Herald*.

S. W.

#### SULPHURETTED HYDROGEN IN THE URINE.

DR. GISCARO reports, in the *Revue Méd. de Toulouse (Jour. de Méd. et de Chir., juillet, 1880)*, the case of a gentleman, aged forty-two, the subject of frequent attacks of dyspepsia, symptomatic, according to Dr. Giscaro, of a rheumatic affection. The patient observed that his urine had constantly the odour of rotten eggs prior to the advent of the gastric symptoms which from time to time he suffered from. A chemical examination of the urine at one of these periods showed that it contained sulphuretted hydrogen. Dr. Giscaro confesses his inability to explain this strange phenomenon. Curiously enough, Dr. Cameron, of Dublin, unaware of Dr. Giscaro's communication, has recently published in the *Lancet* (Nov. 13, 1880, p. 766) a case of a similar kind which has been under his observation. The patient was a gentleman of middle age, whose complaints were always of a somewhat indefinite character. His urine contained free sulphuretted hydrogen the moment it was passed. This continued for a period of somewhat over two years. So soon as the sulphuretted hydrogen disappeared its place was taken by ammonia, which in its turn continued present in the urine for about two years also. Dr. Cameron likewise refers to the case of a young lady from whose skin sulphuretted hydrogen was exhaled. Her urine contained no  $\text{SH}_2$ .

#### SUBCUTANEOUS EMPHYSEMA OCCURRING DURING LABOUR.

DR. LWOFF (*Meditz. Vestnik*, 1880, No. 34) reports a case of this rare accident; the only other instances of which he has been able to find are the three cases recorded in the *Irish Hospital Gazette* for 1873, pp. 38, 165, &c. His patient, a primipara, was admitted to the Kazan University Obstetric Clinic on Feb. 8, 1880. She was a healthy, robust young woman, with normally developed parturient canal, and was delivered of a healthy child after normal labour. At the close of the first stage of labour Dr. Lwoff observed that the patient's face grew puffy, her neck became very thick, so that all natural depressions on it disappeared, and the face grew cyanotic. Examination of the parts revealed very distinct crepitation, which was not superficial, but extended quite deep into the

tissues. Emphysema extended to the insertion of the platysma myoides and mastoid processes of the temporal bones, and downward it reached to the third ribs. Posteriorly it did not extend beyond the anterior borders of the trapezii. Patient complained of pain in the throat, slight cough, and difficult deglutition. On auscultation after labour breathing at the apices was found harsh, but vesicular in character. Percussion of the chest normal. Breathing, at first 32 per minute, soon fell to 20. No dyspnoea. On the third day emphysema began to disappear and left no traces on the seventh. Patient left the hospital entirely well the following day.—*N. Y. Med. Record*, Dec. 4, 1880. [Another case has since been reported in the same journal, Dec. 18, 1880; and two additional cases, not mentioned by Dr. Lwoff, are referred to in the *Irish Hospital Gazette*, *loc. cit.*, as having been reported in the *Med. Press and Circular*, 25th May, 1870.—ED.]

#### OXYGEN INHALATIONS.

IN the session of the Académie de Médecine in Paris of 21st September last, Dr. Maurel communicated some observations of his on emphysema and whooping-cough complicated with bronchitis and croup, and cured by inhalations of oxygen. He insists on the fact that these inhalations are not contra-indicated by the febrile state, and advises medical men to try oxygen inhalations in croup and diphtheria.

KARL KAUFMANN.

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### NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

#### *Therapeutical and Dietetic Preparations.*

MESSRS. BURROUGHS, WELLCOME, & COMPANY, the well-known manufacturing chemists of Snow Hill, London, have courteously forwarded to us a case of some recently-introduced therapeutical and dietetic preparations. Most of these have already an established reputation, but a few words about them may not be superfluous:—

1. The “Burroughs’ Beef and Iron Wine” is a highly-concentrated, strength-giving, digestive food. Each fluid half ounce, or tablespoonful, represents the nutritive value of about one ounce of good fresh beef with two grains of citrate of iron and one-eighth of a grain each of gentian, calumba, wahoo, and orange peel in a pure medicated wine. Adults may take a tablespoonful alone or mixed with water between meals, or when fatigued or exhausted.

2. “Wyeth’s Compressed Tablets” are now widely known as a convenient way of dispensing certain medicines in a simple yet concentrated form. The tablets of chlorate of potash contain five grains each; those of ammonium chloride three grains each; those of sodium bicar-



bonate five grains each; those of potassium bicarbonate five grains each. More recently, tablets of chlorate of potassium and borax have been introduced, each of which contains  $2\frac{1}{2}$  grains of the chlorate and  $2\frac{1}{2}$  grains of borax.

3. The "Kepler Malt Extract" is an agreeable substitute for cod-liver oil, with which, however, it may be given in combination (*oleum morrhue cum extracto malti* [Kepler]). It is a concentrated, nutritious, and easily-digested food. In our own experience, children take it readily, spread upon bread like treacle or preserve. It is free from alcohol, but contains all the valuable nutritive and digestive principles of the best malted barley—namely, malt sugar and dextrin, diastase, phosphates, and albuminoids. Adults may take a dessertspoonful to a tablespoonful three times a day, directly after or with meals.

4. "Fellows' Compound Syrup of the Hypophosphites" is already in much request as a powerful restorative and nerve tonic. It contains the hypophosphites of iron, quinia, strychnia, manganese, lime, and potash. The medium dose for an adult is one teaspoonful, representing the one-sixty-fourth of a grain of pure strychnia. It should be taken diluted shortly before, with, or after meals. We have tried it with milk, which forms a most suitable and agreeable vehicle.

5. "Wyeth's Dialysed Iron" [*Ferrum Dialysatum*] is described as a neutral solution of oxide of iron in the colloid form, the result of endosmosis and diffusion with distilled water. The advantages claimed for this preparation are—

- a. It is easily administered, the dose being very small.
- b. It has no unpleasant taste or smell.
- c. It does not irritate the stomach.
- d. It has no effect on the bowels, producing neither constipation nor diarrhœa.
- e. It does not blacken the teeth.

Dialysed iron is made by precipitating ferric chloride with diluted water of ammonia, washing the ferric hydrate which falls, dissolving it in a solution of ferric chloride, and placing the result in a dialyser. Here the iron solution is separated from water by a parchment membrane, and is gradually deprived more or less completely of its chlorine by the passage through the membrane of a chlorinated compound.

The dose is from 10 to 20 or 30 drops in a little water, with or without sugar, or dropped on a small lump of white sugar. The solution should be kept in a well-corked bottle and protected from severe cold.

In concluding this notice we have to congratulate Messrs. Burroughs, Wellcome, & Co., on the enterprise which has enabled them to make these scientific preparations so extensively known and appreciated.

# THE DUBLIN JOURNAL

OF

## MEDICAL SCIENCE.

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APRIL 1, 1881.

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### PART I.

### ORIGINAL COMMUNICATIONS.

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ART. XI.—*On a Case of Spinal Irritation, complicated by Cataleptic Manifestations.* By ROBERT SAMUELS ARCHER, A.B., M.B., Univ. Dubl.; Honorary Visiting Physician to the Fever Hospital, Netherfield-road, Liverpool.

SINCE the year 1828, when Dr. Brown<sup>a</sup> drew attention to spinal irritation as a special form of disease, there have been expressed a great variety of views concerning its nature and pathology. During the period, in the history of medicine, in which pathology reigned almost supreme over the medical mind, the very existence of such an affection appeared to be, if not entirely denied, at least questioned. And this is not to be wondered at, when we have regard to the rarity of *post mortem* examinations in such cases; and when such an investigation became, by accident, possible, from the absence of any defined (coarse) pathological lesion. But are we, on this account, to deny spinal irritation its proper place amongst the numerous ills to which the human frame is subject? I think not. Are not all physicians acquainted with various functional disorders in other organs of the body? And why should we refuse to admit such in the case of the spinal cord? May not the functions of this most interesting and complex portion of the central nervous system be temporarily disturbed by a molecular change in its numerous cells and other structures, or by some slight shock affecting its blood supply, or by some other disturbing element of

<sup>a</sup> On Irritation of the Spinal Nerves. By Thomas Brown, M.D. Glasgow Medical Journal. May, 1828.

little import, the existence of which has not yet become manifest by the methods of research at present known to physical science, but which, as she advances with sure and steady steps, we may yet hope to be demonstrated—it may be at no far distant period? Surely we are justified in expecting—or, at least, in hoping—that the researches of some microscopist, devoted to the elucidation of obscure problems in nervine pathology, may lead to the discovery of the changes, very minute and subtle indeed, which underlie this and many other so-called functional derangements of the cerebro-spinal system. The great difficulty, as I said before, in this kind of investigation is the rarity of procuring *post mortem* examinations; and experiments on the lower animals cannot help us out of the obscurity, for they are unable to explain the various subjective symptoms which accompany these affections, and which indeed generally are the only ones to inform us of anything being astray. Probably the so-called neurotic temperament may have a good deal to say in the production of this affection, as in this condition there would appear to be a certain amount of instability of the nervous elements throughout the cerebro-spinal system. This view would seem to gain strength from the greater frequency of the affection amongst females compared with males, and its constant association with an hysterical tendency. As to its proximate exciting causes, anything which irritates or weakens the nervous system may be regarded as the most common—more especially, perhaps, (a) alcoholic excesses; (b) opium-eating; (c) traumatism; (d) cold, and other excitors or depressors of nervous action.—(*Erb*.)

The development of the symptoms is generally gradual. Amongst them the most important are—(1) pain along the spine, elicited by pressure, often of the gentlest kind, and referred, in the frequency of its occurrence, to (a) the interscapular region, (b) the back of the neck, and (c) lumbar region; (2) hyperæsthesia of the skin of the affected portion; (3) neuralgic manifestations in various parts of the body, varying according to the portion of the cord affected; (4) paræsthesiæ, such as tingling, formication, cold, heat, and other subjective symptoms; (5) anæsthesia, which, according to *Erb*, is rather a rare symptom; (6) the patient becomes easily fatigued, and cannot walk for any distance without pain; (7) there is usually an absence of any true paralysis, which will serve to distinguish it from other and graver affections of the spinal medulla; (8) spasmodic phenomena; (9) vasomotor disturbances—as pallor, and cyanosis of the hands and feet; (10) gastric derangement, nausea,

or vomiting; (11) palpitations; (12) disturbances of respiration, spasmodic cough, and such like; (13) spasm of the bladder; (14) increased desire to urinate; (15) a large quantity of pale, clear urine is voided; (16) sleeplessness; (17) giddiness; (18) noises in the head; (19) disturbances of vision, *muscæ*, &c. The exciting cause of these symptoms is variously regarded by different authorities. Thus, Ollivier, and, to a certain extent, Stilling, consider that there is a condition of hyperæmia of the cord; whilst Hammond attributes them to anæmia, especially of the posterior columns. Hirsch, and many others, look upon it as a purely functional disorder.

Erb,<sup>a</sup> to whose treatise on the spinal cord I am mainly indebted for the foregoing short sketch, observes that "the most probable (cause) seems to us to be a purely functional disturbance of the cord, in company with which hyperæmia and anæmia of the cord may probably appear when the vasomotor paths are reached by the disturbance; but this whole question, it seems to us, awaits a solution." Erichsen<sup>b</sup> considers that the symptoms arise from anæmia of the cord; and, in fact, calls the affection "spinal anæmia."

Of these opinions, expressed by various authorities, on the probable pathology of "spinal irritation," I must say I am inclined to regard that of Erb with most favour, as being most likely the one approaching nearest the actual state of affairs. I certainly endorse the statement with respect to the want of proof of the intimate nature of the lesion that produces this affection—if, indeed, lesion it may be called.

CASE I.—K. B., aged nineteen years, a domestic servant, was admitted to West Derby Union Hospital in the beginning of November, 1876, whilst I was Resident Medical Officer of that institution.

The following is the account she gave of her condition before admission, and of the accident which caused it:—About seventeen days before she fell out of a window, hurting her back by the fall, and two of her ribs were reported to have been broken, but of this there was no evidence at the time she came under my care. Immediately after the accident she became powerless, and had to be carried to bed, in which, after being settled, she first felt pain in her back.

November 9th.—Pulse about 80, weak; nausea and vomiting, which supervened shortly after the accident, and with which she has been more

<sup>a</sup> *Cyclopædia of the Practice of Medicine*. Edited by Dr. H. von Ziemssen. Vol. XIII. P. 365. English Trans. 1878.

<sup>b</sup> On Concussion of the Spine, Nervous Shock, &c. London, 1875. Lecture VIII.



or less constantly troubled ever since. According to her own account, bowels had not been moved for nearly three weeks. Complained of pain under left breast and "down the spine." There was general hyperæsthesia and tenderness when pressure was used by running fingers along the spine; this became much exaggerated in the lumbar region. The gentlest touch elicited expressions of pain in this part of the vertebral column; great pain on passing urine; occasional pain in left arm; shooting pains and slight anæsthesia in lower extremities. She was ordered a stimulating enema to open the bowels, which had the desired effect, and grs. 15 of potassii bromid., m. 30 of liq. bismuthi (Schacht's), m. 2 of acid. hydrocy. dil. in  $\frac{3}{4}$  i. infus. calumbæ, every four hours.

11th.—Nausea and vomiting appear to be better, and the dorsal pain not quite so severe; passes her urine with less pain; bowels not moved since enema.

13th.—Sickness still continues to get better; bowels moved yesterday by an enema; still there is marked tenderness on pressing the lumbar spine; did not sleep well last night. About 9 p.m. I had to use the catheter, she not having passed any urine (according to her own account) for forty-eight hours, and drew off half a pint of high-coloured concentrated urine.

15th.—Gastric irritability and vomiting have increased since the last report; dorsal pain and tenderness somewhat easier. I had to use the catheter in the evening, as she was suffering a good deal of pain from her bladder being distended with a quantity of urine which she was unable to void.

17th.—Vomiting and dorsal pain and tenderness still persist; pains in arms and legs, slight in former; catheter has to be used twice daily. An ice-bag was ordered to be applied to the spine. The nurse reported that about 7 p.m. she had a very severe attack of what she termed "convulsive spasms" in the lower extremities, "from the hips downwards."

18th.—Pulse 64; had a fair night; dorsal pain was a good deal eased by the injection, hypodermically, of gr.  $\frac{1}{8}$  of hydrochlorate of morphia, and continues easier this morning; complains of pains in epigastrium, and in the superior and inferior extremities; had a "fit" in the evening, which, according to the report of the nurse, would appear to have been somewhat of a cataleptic nature. According to the account received from the nurse, the patient lay for three hours perfectly still, her limbs remaining in whatever position they were placed. On my visiting her at 11 p.m. she presented a wild, weird, staring aspect, and was quite incoherent in her attempts to answer questions. During the day she had voluntarily voided some urine.

21st.—Seems much better in every respect; dorsal pain and vomiting greatly mitigated; shooting pains in legs gone, and she passes her urine voluntarily.

24th.—Very low and sullen in her manner this morning, and inclined to give way to a tendency to weep; vomiting has again come on, but nothing like so severe as it has been; urine has occasionally to be drawn off by the nurse. Last night about 11 p.m. she seemed very strange—would not answer questions, and had a rather wild, weird aspect.

29th.—Vomiting continues at times to a slight extent; slight dorsal pain; experiences a good deal of pain in the hypogastric region; requires the use of the catheter again; urine thick, and, on standing, throws down a muco-purulent sediment.

Dec. 6th.—Had another attack of a cataleptic nature this morning. On going round my wards, I found her lying quite motionless; eyes fixed and staring, apparently taking notice of nothing around her; pupils dilated. Her limbs remained fixed in whatever position I placed them, however unnatural and constrained; pulse during the attack was 102.

From this on she gradually improved—one day worse, the next apparently quite well, and about the end of the year she was considered to be sufficiently recovered to be discharged, during my temporary absence from duty. I have not seen or heard anything of her since.

I regret that when I observed this case I was not aware of the great value of the deep and superficial reflexes in the investigation of diseases of the spinal cord, and so a method of examination was not employed which perhaps might have elicited some interesting phenomena; but, I am inclined to think, not of a very definite nature.

It will not be out of place here to quote a passage from a lecture on “Nervous Mimicry of Diseases of the Spine,”<sup>a</sup> by a man of great mental power and a graphic writer, Sir James Paget. He says:—“Some tenderness on pressure of the spinous processes may be found with real disease of the spine, or of the cerebro-spinal membranes, but excessive tenderness is not. This is rather a characteristic of merely nervous disorder of the so-called *spinal irritation*, and usually you find it, not at one, but at two or more parts of the spine—most frequently between the shoulders or at the loin. At these tender spots the nervous patients cannot bear to be touched; they flinch and writhe when the finger touches them very gently. You may be nearly sure there is no disease of the spine when you see this, or when the tender parts of the spine are not painful in moving, or in coughing or sneezing. And you may be quite sure, I believe, when a light blow or

<sup>a</sup> Lancet. November 29th, 1873.

pressure produces more pain than a hard one, and when you find the same pain or flinching if the skin over or near the spine is pinched, without pressing on the spine itself." "Again, the merely nervous pain is usually variable, though it may be never wholly absent; and its variations seem to be more dependent than those of real diseases are on distant organs, as the ovaries or uterus, the colon or rectum. In these cases the pain may seem paroxysmal, but I think it is not often so of itself."

It was after much consideration, and not without some misgivings as to the accuracy of my diagnosis, that I at length determined to regard this case as one of "spinal irritation." Although, in the first instance, it may have presented some of the characteristics of slight concussion, yet, in the after-symptoms and course of the affection, the preponderance of evidence was in favour of irritation. The only form of concussion that it could possibly have been taken for is what Erb<sup>a</sup> terms "slight shock," in which an accident is followed by severe and general pains in the body, with more or less paralysis of the lower extremities, with exaggerated tendon reflex, unaccompanied by spasmodic symptoms. In this affection improvement takes place after a few days, and our patient probably suffered from it before she came under observation. Some may say "it was simply a case of hysteria," and whilst readily admitting that this neurosis exerted a well-defined modifying influence on the phenomena observed, yet I cannot regard it as an example of this affection pure and simple.

It will be necessary here briefly to review the main features of the case, which lead to the diagnosis of spinal irritation:—(1) there was the general spinal hyperæsthesia, but specially localised in a given region of the spine—the lumbar; (2) there were the neuralgic manifestations in the lower extremities, corresponding to the distribution of the nerves issuing from the portion of the cord principally affected; (3) we had the sub-mammary pain on the left side, but to this we cannot attach much importance as a diagnostic symptom *per se*, it occurring so frequently in the various other affections to which the female is liable; (4) anæsthesia, to a moderate extent, is another symptom—according to Erb<sup>b</sup> a rare one; (5) spasmodic affections of the lower extremities were observed, as well as spasm of the neck of the bladder, and also, probably, of the sphincter ani, the former producing difficulty of micturition, and frequently requiring the use of the

<sup>a</sup> Loc. cit. P. 349.

<sup>b</sup> Loc. cit.

catheter to relieve the distended bladder, the latter giving rise to constipation; (6) nausea and vomiting were other troublesome symptoms, which, according to Paget,<sup>a</sup> are common accompaniments.

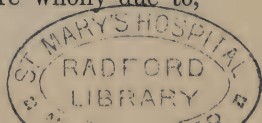
All these, and many other symptoms of minor importance, were present in the case under consideration, and, together with others, are laid down by Erb (as mentioned in a former part of this paper) as characteristic. It is true that no one of them may be regarded as absolutely pathognomonic of the affection, but when they are found grouped together they are strong presumptive evidence of this particular functional derangement of the spinal cord—functional, because we are not acquainted with the actual pathological lesion producing it.

There are several affections of the cord for which spinal irritation might possibly be mistaken, and between which it is necessary to establish a differential diagnosis, and the most important of these are hyperæmia, spinal meningitis, meningeal tumours, myelitis, and that which perhaps bears the most resemblance to it, neurasthenia spinalis. (1.) *Hyperæmia* will be distinguished by a certain amount of true paralysis of the muscular system, together with, probably, a certain amount of incoordinate movements and more or less spasmodic twitching. (2.) *Spinal meningitis* may be distinguished by painful tension of the muscles of the back, fever, and late paralysis. (3.) In cases where there are *meningeal tumours*, the symptoms are confined to areas supplied by certain nerves. (4.) In *myelitis*, instead of the gentlest pressure causing the patient to wince, pain is only experienced when the vertebræ are pressed deeply; there is no circumscribed hyperæsthesia along the vertebræ; and generally a girdle sensation is present. We find also early anæsthesiæ and paralyses, with painful contractures and spasms. (5.) Perhaps the affection most likely to be mistaken for "spinal irritation," and *vice versâ*, is *neurasthenia spinalis* (spinal nervous weakness); but the preponderance of motor weakness in this affection may be a useful point in the diagnosis.

It will be seen that I have not here attempted to give an elaborate description of the differential diagnosis of these affections; I have only tried to indicate a few characteristics of each lesion by which they may be most readily distinguished.

The case, taken in its entirety, bore the impress of, many of the symptoms were exaggerated by, and several were wholly due to,

<sup>a</sup> Loc. cit.





that subtle, omnivorous, convenient (for what would we do without hysteria to cloak our ignorance in many cases of female disease), and much-mimicking neurosis, wrongly named hysteria. As evidences of this may be specially mentioned (*a*) the occasional moroseness of manner, (*b*) the tendency to weep, and (*c*) the curious attacks of a cataleptic nature.

As long ago as 1829 Dr. Darwall<sup>a</sup> drew attention to the capriciousness of temper and variability of spirits, in a paper on "Cerebral and Spinal Irritation," as well as to gastric derangement, palpitation, and constipation of the bowels..

The interesting investigations of Charcot on grave hysteria have let in a flood of light on catalepsy and other curious cognate manifestations of the hysterical state; and I would refer those who may take an interest in this subject to his writings. In *The British Medical Journal* of Jan. 22, 1881, there is a most interesting review of a paper on "Catalepsy and Cerebral Localisation," communicated to the *Progrès Médical* by G. Ballet. In this there are two conditions described—one called "hysterical lethargy" and the other the "cataleptic state"—as occurring in cases of "grave hysteria." In the first, inclination of the head to one or other side, closure of the eyelids, a motionless condition, and limpness of limbs, are produced by directing the patient's attention to a fixed object; during this state the power of speech, and even of calculation, remains. If the eyelids now be opened, the patient immediately lapses into the "cataleptic state," in which the limbs become rigid and remain in whatever position they may be placed, and speech is lost. This was the condition of our patient on several occasions, but whether it was preceded by the lethargic stage or not I do not know. M. Lepine has further demonstrated a curious fact in these patients. He showed that if only one eye be opened the corresponding side of the body passed from the state of lethargy to that of catalepsy. If it be the left eye that is opened the power of speech remains, whereas if it be closed and the right opened, not only is the right side of the body thrown into the cataleptic state, but the power of speech is lost. This is a most significant and interesting point, showing that there must be some deep impression produced on the speech centre situated in the left hemisphere. This impression cannot be of a coarse destructive nature, but must be a minute subtle derangement in the cerebral molecules, analogous to that which probably lies at the root of spinal irritation.

<sup>a</sup> Midland Medical and Surgical Reporter. May, 1829.

The medulla oblongata is also liable to these molecular temporary disturbance, as the following case will show:—

CASE II.—A lady, a particular friend of my own, an accomplished and refined woman, the mother of a large family, was suddenly seized, on the receipt of not altogether pleasing intelligence connected with family matters, with an incoordinate affection of speech closely resembling that observed in bulbar paralysis, together with other nervous phenomena, which gradually wore away in a few days.

This case shows that great force of the mental shock fell on the coordinating speech centres in the medulla.

That these functional nervous derangements should be more frequent in the female than in the male sex, I think might be guessed at *à priori* from a consideration of the more delicate general conformation of all the parts in woman, from her more excitable, less stable, more impressionable nature. The nervous system is, doubtless, more sensitive, and more delicately strung, so to speak, in the female sex. These very characteristics render her more susceptible to external shocks, whether of a physical or psychical nature. As we ascend in the social scale these feminine attributes as a rule become more highly developed, and we find in the upper ranks of life, almost in proportion to the degree of refinement and culture, a most delicately-balanced nervous system, which, like a very delicate, intricate piece of machinery, is readily put out of order. These qualities with which Nature, doubtless for a good purpose, has endowed the gentler sex, render her less resolute, more “nervous,” not so daring and enterprising as the sterner sex, and to a greater or less degree mould in her the various diseases to which both sexes are liable in common.

ART. XII.—*On Lethargy or Trance.*<sup>a</sup> By THOMAS MORE MADDEN, M.D., M.R.I.A.; Obstetric Physician to the Mater Misericordiæ Hospital; Physician to the Hospital for Sick Children, &c.

THE protracted suspension of intellectual and physical power by a morbid condition resembling profound sleep, and in some cases hardly distinguishable from death, is obviously a matter of practical medical importance. Nor is the interest of this subject entirely

<sup>a</sup> Read before the Medical Society of the King and Queen's College of Physicians, Wednesday, March 2, 1881.

professional, as it has been discussed by metaphysicians in every age, and has supplied the theme of countless fictions from the history of Epimenides the Cretan, narrated by Pliny (Lib. vii., c. 52), down to that of the familiar friend of our youth—Rip Van Winkle—the most charming of those “airy nothings” to which the pen of Washington Irving has given “a local habitation and a name.”

The special interest of this topic for us is a very different one, however, and we need no fictitious assistance to heighten our sense of the pathological importance of those conditions in which the ordinary evidences of vitality and phenomena of life are temporarily in abeyance.

The particulars of the following cases of protracted torpor may therefore be of sufficient interest to excuse my now occupying the time of the Society with them, and also adding some general observations on this subject:—

CASE I.—*Hysterie Trance*.—In the afternoon of the 31st of December a young lady, Miss R., aged nineteen, apparently in perfect health, went into her room to make some change of dress. A few minutes afterwards she was found by her mother lying on her bed in a profound sleep, from which she could not be aroused. This continued until the time when I saw her twenty-four hours later. She was then still sleeping tranquilly, the decubitus being dorsal; respiration scarcely perceptible; pulse 70, and extremely small; her face was pallid, lips colourless, and the extremities icy cold. At this moment so death-like was her aspect that a casual observer might have doubted the possibility of the vital spark still lingering in that apparently inanimate frame, on which no external stimulus seemed to produce any sensorial impression, with the exception that the pupils were found normal and responded to the light. I directed sinapisms to be applied over the heart and to the legs, where they were left on until vesication was occasioned without causing any evidence of pain. Faradisation was also resorted to without effect. The bowels were cleared out by a foetid injection, and nutritive enemata, with ammoniated tincture of valerian in each, were ordered to be given every third hour.

On the following morning, January 2nd, her condition was unchanged, but during the night she had twice got out of bed for an instant without apparently awakening. A little beef tea put into her mouth was after some delay slowly swallowed. On the morning of the 3rd she was still lethargic and weaker than before, her pulse being hardly discernible at the wrist, and the feet were icy cold. Under the influence, however, of stimulants, and especially the hypodermic injection of sulphuric ether,

she rallied; the pulse and temperature improved, and for a moment, by shouting loudly in her ear, she was so far aroused, without opening her eyes, as to whisper very faintly, "I am tired," and then relapsed into lethargy. A few hours later she sat up in the bed for a moment, stared wildly about, muttered some unintelligible nonsense, and again at once fell back into her previous condition.

At my request Dr. Banks now saw her in consultation, and agreed in regarding the case as one of hysterical lethargy.

It would be useless to occupy the time of the Society with any further transcript of my daily notes of this case, her state continuing almost unchanged, with the important exception of gradually increasing intervals of semi-consciousness, like that of a person between sleeping and waking—never, however, exceeding five consecutive minutes, until the morning of the 9th, when she suddenly woke up, and, to the great surprise of those about her, called for her clothes, which had been removed from their ordinary place, and wanted to come down to breakfast, as she was in the habit of doing, without consciousness that anything unusual had occurred. Her recovery was comparatively rapid. For a week longer she was confined to bed by extreme weakness and a sense of fatigue, remaining semi-lethargic and sleeping for a great part of the day; but these symptoms gradually passed off, and by the end of a fortnight from the commencement of the attack she was perfectly well.

CASE II.—*Comatose Lethargy*.—On the 3rd of November, a boy aged six, living in Upper Fitzwilliam-street, shivered, and was attacked by gastro-enteric fever. Within a few days the temperature ran up to 105°; the pulse reached 140, and was full and bounding; the diarrhœa, which set in early, was frequent and uncontrollable; he emaciated rapidly; the skin was hot and dry, and there was obstinate insomnia. As the disease progressed, however, the nervous hyperæsthesia and incessant loquacity which marked the first ten days of the fever gradually subsided, and an opposite condition succeeded. He became torpid, and ultimately comatose; the diarrhœa ceased, but the evacuations were involuntary; he could not be aroused to take nourishment or medicine; his temperature fell to 101°; and the pulse, which remained as rapid as before, became so feeble as to be almost imperceptible. My friend, Dr. Cruise, now saw him in consultation, and we blistered the head and employed mercurial inunction, &c. I need not, however, weary the Society by any detail of the daily symptoms and treatment. The obvious indication was to sustain life by nourishment and stimulants, which, as he could not be aroused to swallow, were administered by enemata; and the extension of bed sore was prevented by most careful nursing.

In this condition he remained between life and death for forty-seven days, until the 7th of February, when his mother and the Infirmarian



sister who were watching him were suddenly startled at hearing a faint voice uttering at long intervals a few nearly unintelligible words. Almost as gradually as he had lost them, his physical strength and mental vitality now returned, and three weeks after the first appearance of consciousness he was able to go to the country, where he soon convalesced.

#### THE ÆTIOLOGY OF LETHARGY.

The foregoing cases are each in this way typical—the first being a well-marked case of hysterical cataphora or trance, a state of mental and physical torpor showing itself as an idiopathic disease, and apparently differing from natural sleep only in its long duration. The second was an example of soporose coma affecting all the voluntary powers as well as the intellectual and sentient faculties—the flickering vital spark being merely preserved from complete extinction by the involuntary action of the spinal and ganglionic nervous centres. The immediate cause of the comatose condition in the latter case was evidently cerebral anæmia, resulting in the deficient production of nerve force—the true *apoplexia ex inanitione* described by Willis and other older writers as an occasional event in the later stages of putrid fevers. Very recently I attended a lady, also seen by Dr. Cruise in consultation, who remained in a lethargic state of this kind for twenty-seven days following typhoid fever after delivery.

The ancient medical writers evidently attached more importance to lethargy than their modern successors do. Thus we might contrast the meagre notice of this subject in Professor Nathnagle's article on "Anæmia of the Brain," in Ziemssen's "Cyclopædia," with the account of the treatment of lethargy left by Aretæus the Cappadocian, in the second century, in the fragment of his treatise, *Θεροπεία Ληθαργικίων*—on "The cure of Lethargics."

It would be useless here to discuss the general pathology of lethargy, which is but a symptom of some local lesion or constitutional disturbance. Comatose affections are not only most complex in their character and assume widely-varying phases, but are also found associated with many different physical conditions. Thus the coma resulting from pressure on the brain in a case of depressed fracture of the skull, and which disappears the instant the cause is removed by the surgeon, or that occasioned by an effusion of blood or serum, as in apoplexy, is to all external appearance undistinguishable from the coma produced by the circulation of a narcotic or alcoholic poison, or the uræmic auto-toxæmia of renal

disease, or the septicæmia of typhus, not to speak of the similar torpor resulting from exposure to intense cold or the soporose lethargy of aggravated hysteria.

“One of the curious forms of hysteria,” says Dr. Elliotson,<sup>a</sup> “is long-continued insensibility, which is called a trance. Sometimes there is insensibility for a few days and sometimes for many weeks.” “Morbid disposition to excess of sleep,” says Dr. Forbes Winslow,<sup>b</sup> “is frequently precursory of attacks of apoplexy, and often exists in other forms of disease of the brain caused by the presence of toxic agents in the blood. A state of lethargic sleep is one of the peculiar and well-marked signs of cerebral disorder consequent on functional derangement or chronic organic disease of the kidneys interfering with the free elimination of urea.”

Cataphora occasionally terminates in death. A very melancholy instance of this kind came lately under my observation. The patient was a young lady, the wife of a member of our own profession. She was delivered of her first child on the 1st of January, was attacked by typhoid fever a few days afterwards, and on the subsidence of the fever fell into a state of profound stupor, which lasted for nearly a month, and in which she died on the 24th of February. “Two sisters,” says Dr. Elliotson, “were affected in the same way, one of whom died before I saw her, and I went to see the other. Although she was well supported every hour as she lay apparently a corpse, yet, I believe, she sank at last. The other was a case of regular hysteria, and I concluded she would do well under ordinary treatment, but all at once she sank. Swelling of the hands came on, the pulse became weak, and she died.”<sup>c</sup>

Lethargy has been described as “an exaggerated sleep;” but the definition can hardly improve our knowledge, unless we could in the first instance agree as to what is the normal duration of sleep; and this cannot be defined, varying in each case in accordance with age, temperament, custom, and previous expenditure of mental and physical force. Thus the infant, whose rest is interrupted only by brief intervals for food and egestion, sleeps as normally as the healthy adult who takes his seven hours’ rest, or the old man who rises satisfied if he has obtained four hours of light and, perhaps, broken slumber.

These typical conditions of somnolency at different periods of

<sup>a</sup> Principles and Practice of Medicine. 2nd Edition. P. 686.

<sup>b</sup> Obscure Diseases of the Brain. P. 610.

<sup>c</sup> Elliotson, *op. cit.* P. 688.

life may in some exceptional cases be reversed however without apparent ill result. Thus I have attended a family in which infantile insomnia was the rule in four or five successive instances; the infants referred to being, despite all treatment, obstinately sleepless for eighteen out of the twenty-four hours, until after the period of dentition, without apparent cause or apparent injury.

On the other hand the ordinarily slight sleep of the old is sometimes replaced by an increasing torpitude of mind and body, until at last—"life passes into sleep, and sleep into death."

Nor is age the only factor to be taken into account in considering the natural period of rest; for individual temperament and habit have their share in the problem. I know of an instance where a young officer, otherwise in the most perfect health, was of so sleepy a disposition that he would not do with less than fourteen hours' daily sleep—an indulgence which cost him his commission, as he could not by any effort be aroused in time for parade.

The influence of climate and weather on sleep are too well known to need any observations, and the "sleepy-hollow" of the novelist is a popular exemplification of the unquestionably sedative action of a condensed atmosphere. In common parlance, sudden increasement of atmospheric pressure is recognised as "heavy" or "drowsy weather," and most people sleep longer and more soundly in low-lying situations, and especially when at sea, or in its vicinity, than in the more rarefied atmosphere of higher districts.

Many years ago it was observed by Dr. Wilson Philip,<sup>a</sup> that no sleep is healthy but that from which we are easily aroused. "Sleep," says Feuchtersleben,<sup>b</sup> "is a sign of health as long as, conforming to the telluric changes, it fulfils its teleological purpose, namely, compensation for what has been expended. . . . If sleep be too long continued, or if there be an involuntary abnormal inclination to sleep, the first case is again ætiological, the second semeiotic. In a semeiotic view somnolency indicates pressure, or a pre-existing imperfect action of the brain."

The idea that "sleep is the result of a suspension of volition produced by the exhaustion of sensorial power" may, like some other physiological doctrines of the present time, be traced back to that strange effort of genius perverted by error, Dr. Darwin's "*Zoonomia*," the dust on whose long-closed pages has been disturbed by recent plagiarists. The passages in which Darwin

<sup>a</sup> On Sleep. Philosophical Transactions, 1833.

<sup>b</sup> Principles of Medical Psychology. P. 77.

propounded his theory on the proximate cause of sleep, which is almost identical with that in our most modern text-books, is far too long for citation here, but may be found in the 28th chapter of the first volume of "*Zoonomia*."

The history of the first described of the cases of lethargy now under consideration points to no previous expenditure of nervous force, which might account for the abnormal and prolonged depression of the vital energies described; and in such instances we must seek the cause of the protracted somnolence, as in infancy, in the non-production and not in the exhaustion of sensorial power, which is the proximate cause of natural sleep.

The condition of the mind during lethargy is a question of much psychological interest. In ordinary sleep it is more than doubtful if the functions of the cerebral hemispheres are ever completely dormant. Mental activity seems inseparable from life, and probably at no moment during sleep is the mind unoccupied, although we may have no subsequent perception of its operations or dreams.

It seems hardly possible that in conditions so apparently similar as lethargy and sleep there can be any essential difference beyond the obvious one of degree or duration. In ordinary sleep the vital actions are clearly not limited to the purely automatic functions of the spinal and ganglionic systems. For, during dreaming the emotional and intellectual faculties are as active as they are in that analogous mental condition, insanity; and we need only refer to somnambulism to show that during sleep as profound as lethargy the cerebral volitional impulses may be responded to by motional activity. If, then, during lethargy the mind is in the same condition as in ordinary rest, "what dreams may come" in that protracted sleep "must give us pause."

Several years ago, in a paper "*On Dreaming*," read in this Hall, I discussed this point, and may perhaps venture to quote my forgotten memoir as to the probable mental condition of patients in the state of lethargy.

Most metaphysical writers incline to Locke's opinion that we do not dream always when asleep, for we do not think always; and he argues that we cannot think at any time, waking or sleeping, without being sensible of it. Reid and M'Nish are of a similar opinion. Dr. Carpenter holds the same views on this subject, and Lord Brougham in his "*Discourse on Natural Theology*," expresses his belief that we dream only in the intermediate condition between sleeping and waking. The experience, however, of the



great majority of observers confirms the opposite opinion—namely, that we seldom, if ever, sleep without dreaming. Von Feuchtersleben holds that “we never sleep without dreaming.” Kant and Von Schlegel incline to the same opinion, and the highest authorities on mental science in this country agree in this view. The late Sir Benjamin Brodie says:—“I should be inclined to doubt whether we ever sleep without some degree of dreaming. At least, not to dream seems to be not the rule, but the exception to the rule.” Sir H. Holland, too, argues that “sleep without dreams does not exist.” Sir William Hamilton made a series of experiments by causing himself to be aroused from sleep at certain fixed intervals, and when thus suddenly wakened from sleep always found that he was either interrupted in the course of some dream, which he remembered more or less perfectly, or else felt aware, at least, that he was not aroused from an unconscious state.

My own experience bears out the same view. For many years, as an obstetric practitioner, I have been subject to frequent interruptions of rest, and on hardly any occasion during this long period was I suddenly awakened from dreamless sleep.

As long as vitality continues it appears most improbable that there can ever be a complete cessation of thought. During sleep, as in the waking state, the mind continues to operate, however imperfectly or abnormally, or however unconscious of its operations we may be subsequently. Everyone who had occasion to watch by the bedside of a sleeping invalid has seen and heard the changing phases of dreams expressed in motions and words, of the cause of which the patient has no subsequent recollection whatever.

During sound sleep, and still more so in lethargy or trance, all impressions from the external world are either entirely shut out, and the mind is no longer in any degree under the dominion of these suggestions; or else, as is more frequently the case in light or ordinary sleep, these impressions are so faintly or imperfectly conveyed to the sensorium as to produce sensations and effects entirely different from those which they would have occasioned in the waking mind. Moreover, impressions may originate within the brain itself, as well as be conveyed to it from without; and such seems the origin of the earliest symptom of approaching recovery from profound lethargy in the first case just related—namely, that the patient, without apparently awaking, was able to rise out of bed, for necessary purposes, for a few moments, some time

before being able to briefly answer in the negative or affirmative on being loudly spoken to, without interruption of sleep. Her state was then approaching somnambulism, or imperfect sleep, for any response to our questions not only proved that external impressions had been duly transmitted through the *portio-mollis* of the seventh nerve, and had produced the normal effect on the portion of the brain connected with the sense of hearing, but, moreover, showed that volition had consequently been aroused and transmitted to the muscles of the vocal organs.

The well-known phenomena of incubus are sufficient to disprove the theory that volition is necessarily suspended during sleep. Dryden has well rendered Virgil's description of this state:—

“And as, when heavy sleep has closed the sight,  
The sickly fancy labours in the night,  
We seem to run ; and, destitute of force,  
Our swelling limbs forsake us in the course—  
In vain we heave for breath, in vain we cry ;  
The nerves, unbraced, their usual strength deny,  
And on the tongue the faltering accents die.”



ÆNEID, B. XII. L. 908.

In such dreaming it is evident that it is not volition, but the power of co-ordinating the movements which are willed, that is, suspended by sleep—the cerebellum, under these circumstances, being probably quiescent, whilst the cerebrum is active; and, therefore, no voluntary action can respond to the exercise of the will.

#### DEATH-TRANCE.

Analogous to lethargy is that still more profound torpor which occasionally so closely counterfeits death as to be confounded with it; for, although the majority of cases in which persons in this condition are said to have been consigned to the horrors of a living tomb have even less *vraisemblance* than the tale which Edgar Poe has founded on the same topic, still there can be no doubt of the actual occurrence of such a calamity in some well-authenticated instances. And it is unnecessary to refer to the death-like torpitude of the hibernating animals, or that to which, when exposed to extreme cold, man is liable, to show that under various circumstances, respiration, cardiac action, sensibility, and volition, may lie dormant for an undetermined period before the extinction of the vital spark.

“Death-trance,” says Dr. R. R. Madden,<sup>a</sup> “is a form of suspended animation. There are several others. After incomplete narcotic poisoning, after suffocation in any of its various ways, after exposure to cold in infants newly born, a state is occasionally met with of which, although many of the appearances may differ, the common feature is an apparent suspension of the vital action. But all of these so-cited instances agree in another important respect which separates them as a class from death-trance. They represent, each and all, a period of conflict between the effects of certain deleterious impressions and the vital principle—the latter struggling against the weight and force of the former. Such is not the case in death-trance.”

This condition has been said to differ from the other species of lethargic sleep referred to as being a positive status—a period of repose. “The basis of death-trance,” says Dr. Mayo,<sup>b</sup> “is the suspension of the action of the heart and of breathing and of voluntary motion—generally little sense of feeling and intelligence. With these phenomena are joined loss of external warmth, so that the usual evidence of life is gone. But there has occurred every shade of this condition that can be imagined, between occasional slight manifestations of suspension of one or other of the vital actions and their entire disparition. Death-trance may occur as a primary affection, suddenly or gradually. The diseases the course of which it is liable, as it were, to bifurcate, or to graft itself on, are first and principally all diseases of the nervous system. But in any form of disease, when the body is brought to a certain state of debility, death-trance may supervene.”

In such cases auscultation will generally enable us to detect some evidence, however feeble, of cardiac action, or the clinical thermometer will reveal the existence of vital heat, or the older test of the clear mirror applied to the lips will prove the continuance of respiration by the film of vapour on its surface. But in some instances even these evidences of vitality may be practically unrecognisable. Dr. Mason Good<sup>c</sup> relates a case of this kind in which the patient was fortunate enough to have her interment postponed in order to allow a *post mortem* examination to be made,

<sup>a</sup> Phantasmata, or Illusions and Fanaticisms. By R. R. Madden, M.D., F.R.C.S. Eng., M.R.I.A. Vol. I., p. 100. London, 1857.

<sup>b</sup> Letters on Truths contained in Popular Superstitions. By Herbert Mayo, M.D. P. 34.

<sup>c</sup> Study of Medicine. Vol. V., p. 618.

“for, on being submitted to the scalpel, its first touch brought her to her senses and threw her into a state of violent agitation, the anatomist being almost as much frightened as herself. So Diembroeck relates the case of a rustic who was supposed to be dead of the plague and was laid out for interment. It was by accident three days before he could be carried to the grave, when, in the act of being buried, he showed signs of life, recovered, and lived for many years. Mathæus, Hildanus, and the collectors of medical curiosities, are full of stories of this kind—many of them, indeed, loosely related, but many also possessing every requisite authority for belief, and urging the necessity of waiting for signs of putrefaction before the lid of the coffin is screwed down—or, I should rather say, before the body is removed from its deathbed.”

In the appendix to the second edition of Dr. Curry’s “Observations on Apparent Death,” several instances of a similar kind are cited, and amongst others is the case of William, Earl of Pembroke, who died April 10th, 1630. When the body was opened in order to be embalmed, he was observed, immediately after the incision was made, to lift up his hand.

Vesalius, the celebrated anatomist, who was physician to the Emperor Charles V., and to his successor Philip II., met with a similar circumstance in the case of a Spanish nobleman, whose body he was employed to open in order to discover the disease of which he died. The nobleman’s relations represented him as a murderer; and it was with difficulty that Philip rescued him, on condition that he should make a pilgrimage to Jerusalem. In returning, the ship was cast away on the island of Zante, where the unfortunate Vesalius perished from hunger.

“A correspondent of the late Dr. Hawes assures us,” adds Dr. Curry, “that there was then living in Hertfordshire a lady of an ancient and honourable family, whose mother had been brought from death to life, after interment, by the attempt of a thief to steal a valuable ring from her finger. Whether it was the same or not I cannot say, but Lady Dryden, who resided in the southern part of Northamptonshire, in consequence of some such event having occurred in her family, expressly directed in her will that her body should have the throat cut across previous to interment; and, to secure this, bequeathed fifty pounds to an eminent physician, who actually performed it.” A similar occurrence took place in Dublin some years ago—the case of an eminent dentist, who left a sum of money for the same purpose to a distinguished surgeon well



known to us all, and who performed the *post mortem* operation directed in the will.

Dr. Elliotson<sup>a</sup> refers to the case of a female (for, he says, these strange things generally occur in females) “who was presumed to be dead. Her pulse could not be felt, and she was put into a coffin, and as the coffin-lid was being closed they observed a sweat break out, and thus saw that she was alive. She recovered perfectly, and then stated that she had been unable to give any signs of life whatever; that she was conscious of all that was going on around her; that she heard everything; and that when she found the coffin-lid about to be put on the agony was dreadful beyond all description—so that it produced the sweat seen by the attendants.”

The late Mr. Braid,<sup>b</sup> of Manchester, reported several cases of a similar kind. “In two of these,” he says, “the patients remained in the horrible condition of hearing various remarks made about their death and interment. All this they heard distinctly, without having the power of giving any indication that they were alive, until some accidental abrupt impression aroused them from their lethargy, and rescued them from their perilous situation. On one of these occasions, what most intensely affected the feelings of the entranced subject, as she afterwards communicated to my informant, was hearing a little sister, who came into the room where she was laid out for dead, exulting in the prospect, in consequence of her death, of getting possession of a necklace of the deceased. In another instance the patient remained in a cataleptic condition for fourteen days. During this period the visible signs of vitality were a slight degree of animal heat and appearance of moisture when a mirror was held close to her face. But although she had no voluntary power to give indication by word or gesture, nevertheless she heard and understood all that was said and proposed to be done, and suffered the most exquisite torture from various tests applied to her.”

It appears beyond doubt that under some circumstances the phenomena of death-trance may be produced by voluntary effort. Perhaps the best authenticated case of this sort is that of Colonel Townsend, which was attested by his medical attendants:—“In their presence,” says Dr. Mayo, “Colonel Townsend laid himself

<sup>a</sup> Elliotson. *Op. cit.* P. 687.

<sup>b</sup> Observations on Trance. By James Braid, L.R.C.S. *Medical Times*, June 1st, 1850. P. 402.

down on his back, and Dr. Cheyne undertook to observe the pulse; Dr. Reynard laid his hand on his heart, and Mr. Shrine had a looking-glass to hold to his mouth. After a few seconds, pulse, breathing, and the action of the heart, were no longer to be observed. Each of the witnesses satisfied himself of the entire cessation of these phenomena. When the death-trance had lasted half an hour, the doctors began to fear that their patient had pushed the experiment too far, and was dead in earnest, and they were preparing to leave the house when a slight movement of the body attracted their attention. They renewed their routine of observation, when the pulse and sensible motion of the heart gradually returned, and breathing and consciousness. The sequel of the tale is strange. Colonel Townsend, on recovering, sent for his attorney, made his will, and died, for good and all, six hours afterwards!"

The late Dr. Braid was a firm believer in the possibility of the voluntary production of this state. As Dr. Braid's papers, which were published in *The Medical Times* upwards of thirty years ago, may perhaps not be familiar to the Society, I may here quote one of the remarkable cases of the kind which he adduced. This was communicated to Dr. Braid by Sir C. Wade, sometime Political Agent at the Court of Runjeet Singh at Lahore. "I was present," he says, "when the Fakeer mentioned by Captain Osborne was buried alive for six weeks, and although I did not arrive till a few hours after his interment, I had the testimony of Runjeet Singh and others to the truth of the Fakeer being so buried before them, and it is my belief that there was no collusion in producing the extraordinary facts related. . . . At the appointed time I accompanied Runjeet Singh to the spot where the Fakeer had been buried. . . . The exterior of the body presented no aperture by which air could be admitted or food conveyed to the Fakeer—Runjeet Singh having recognised the seal as the one he had affixed; this was broken, and the mud wall being dug away a dark room was exposed, where a wooden box containing the Fakeer was placed upright. On opening it we saw a figure enclosed in a bag of white linen. This was opened, and the arms and legs found shrivelled and contracted; the face full, the head reclining on the shoulder like that of a corpse. The body was now examined by a medical gentleman, who could discover no pulsation; but there was a heat about the region of the heart which no other part of the body presented. The servant now commenced bathing him with hot water, gradually relaxing the arms and legs,

and placed a thick hot wheaten cake on the top of the head. He then pulled out of his nostrils and ears the wax and cotton with which they were stopped; and after great exertion opened his mouth by inserting the point of a knife between his teeth, and, while holding his jaws open with his left hand, drew the tongue forward with his right, curved position upwards, in which it had originally been, so as to close the gullet. He rubbed the eyelids with clarified butter until he succeeded in opening them, when the eyes appeared quite motionless and glazed. After the cake had been applied for the third time to the top of his head, the body was violently convulsed, the nostrils became inflated, when respiration ensued, and the limbs began to assume a natural fulness; but the pulsation was still faintly perceptible. The servant then put some of the ghee on his tongue, and made him swallow it. A few minutes afterwards the eyeballs became dilated, and recovered their natural colour. From the time of the box being opened to the recovery of the voice not more than half an hour could have elapsed, and in another half hour the Fakeer talked with myself and those about him freely, though feebly, like a sick person.”<sup>a</sup>

Two other cases of a similar character may be also found in Dr. Braid’s letters on this subject, but I much doubt that any of them are sufficient to justify the belief that the individuals referred to really possessed the powers they represented themselves to have acquired.

There could hardly be a more interesting chapter in the records of medical literature than the history of well-authenticated cases of lethargy or trance.

In the “*Philosophical Transactions*” for 1694, the case is related of a man, aged twenty-five, who slept for nearly a month. Two years later he again fell into lethargy, and at first ate, drank, &c., though unconsciously, but at length he ceased doing so altogether, and continued to hibernate for seventeen weeks. “It so happened,” says the narrator, “that the barley was being sown when he fell asleep, and when he awoke it was being reaped. In August he fell asleep again, and did not awake until November.”

Dr. Binns, in his “*Anatomy of Sleep*,” quotes a case recorded in the 8th volume of the “*Transactions of the Royal Society of Edinburgh*,” in which a girl is stated to have slept uninterruptedly from the 1st of July until the 1st of August.

Dr. Cooke, in his “*Treatise on Nervous Diseases*,” Vol. I.,

<sup>a</sup> Dr. Braid on Trance. *Medical Times*, May, 1850.

p. 372, records the case of a young lady who for some time was subject to repeated attacks of lethargy, varying in duration from thirty to sixty-three hours, without seeming to have suffered from want of food or otherwise. In the early part of the disease various means were employed without the smallest advantage, save that whilst under the influence of mercury, which produced a very severe salivation that lasted more than a month, she was free from the complaint. For a considerable length of time these paroxysms recurred, but at length they gradually left her, and soon after she became deranged in mind.

Another remarkable instance of the same kind is related in Dr. Mason Good's "Study of Medicine," Vol. IV., p. 622. The patient was a young lady in her eighteenth year when first attacked by soporose lethargy, which continued to affect her, with irregular intervals of waking, for five years. The intervals occurred two or three times a week, and seldom exceeded an hour or two. During these remissions she sighed, ate reluctantly what was offered to her, had occasional egestions, and instantly relapsed into sleep. Her recovery was sudden, for she seemed to awake as from a night's rest, by a more perfect termination of the paroxysms, which were not followed by a relapse.

It would be easy to add to these citations did space permit. But I have already trespassed too long on the patience of the Society, and hence am obliged to leave out several other references to cases of a similar kind, and also some observations which I had prepared on feigned lethargy. I think, however, that it has been sufficiently shown that the affections discussed in this paper are by no means infrequent, and that they merit more attention than is now generally given to them.

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ART. XIII.—*Practical Notes on some Local Forms of Eczema.*

By J. MAGEE FINNY, M.D., Dubl.; Fellow, King and Queen's College of Physicians; Visiting Clinical Physician and Dermatologist to the City of Dublin Hospital.

(Continued from Vol. LXXI., p. 7.)

III. ECZEMA GENITALIUM.

IV. ECZEMA ANI.

ECZEMA of the genitals may be either acute or chronic, and, as it occurs more frequently in males than females, it may be subdivided according to whether the penis or scrotum be chiefly engaged.



It should, however, be borne in mind, that eczema may attack either or both of these parts separately, or may engage the whole genital region, and involve the anus and perineum. In this latter case it mostly commences at the anus, and extends from thence forwards.

The œdema, which attends eczema attacking loose tissues, is always present in these localities, and phimosis, or paraphimosis may be produced within a short time when the prepuce is engaged. In the scrotum, the vesicles being more numerous and thickly set, more exudation takes place, so that the linen is much stained by a viscid fluid, which, from its decomposition, rapidly gives out a sickening offensive odour.

The acute variety, which is comparatively rare, may pass on into a sub-acute or chronic stage, and this stage, or variety, is that which I have most commonly met at the Special Dispensary for Skin Diseases of the City of Dublin Hospital. I have also observed that chronic eczema of the penis is much more rarely seen than that of the scrotum.

This latter presents different appearances in different patients. In some there is much infiltration and thickening of the natural folds, until the skin becomes so thick as to resemble elephantiasis—just as chronic *eczema crurale* may produce a similar appearance of the foot and ankle; in others, there is more exudation on the surface of a more or less sticky secretion, which, perhaps, from its colour and the staining of the linen, might suggest the presence of gonorrhœa. The individuals most commonly attacked are either adults or past middle life. I have not met with chronic eczema genitalium in either the young or the very old.

When the penis is the seat of chronic eczema, it may be limited to either the dorsum or the under surface. In the latter situation there is a great deal of redness, exudation, and excoriation; but in the former there is very little, and it is only on drawing forwards the skin that the reddish streaks of eczema are seen in the transverse folds. The subjective symptoms of heat, tingling, and itching, which attend eczema as a rule, are always present in these varieties, and render the patient's existence actually a burden to him. In most of the aggravated examples which have come under my notice, the patients have not been able to sleep for several nights, and have expressed themselves as feeling wretched and miserable, and as dreading the hour of sleep, as the itching and tingling invariably become much worse when the body is heated.

Some have told me that they spent the night walking about the room, and only lulled the nervous irritation either by converting the sensations of itching into those of actual pain by severe scratching with the nails, or by constantly bathing the parts in cold water.

Owing to the situation and the close proximity of the parts, as well as to the heat and moisture so common there, eczema is peculiarly troublesome to manage in men going about their usual avocations, and particularly so in the poor, who are at all times far from cleanly in their habits and dress. Again, every time the almost irresistible pruritus is allayed by scratching, an aggravation of the disease has been induced, and the excoriated and often bleeding surfaces soon pour out fresh exudation, and a worse state than before is the inevitable result.

As no grade of life is free from the disease, society has to be avoided by those belonging to the so-called better classes, and long dinner parties, concerts, and religious services have to be shunned. One gentleman told me, when he had been weak enough to go to a dinner party, that he had more than once to leave the dining-room or drawing-room to allay the pruritus by violent rubbing and tearing of the parts. He also said that after thus relieving himself, as it were in a paroxysm of nervous excitement, he would feel quite exhausted and low—doubtless due to nervous depression consequent on the exalted state of erethism he had been thrown into.

It is astonishing how very long patients will endure a moderate amount of discomfort in these regions before they seek medical aid, and thus it happens that when they do seek advice they are often very far from well in their general health. Dyspeptic symptoms, with loss of appetite, eructations and distension after food, are present in some. In others the nervous system is a good deal deranged; they become irritable, restless, easily put out in their business avocations, while they look haggard and worn; and, too often, recourse to alcoholic stimulants is the deplorable result.

This picture, which may to some seem overdrawn, is not so in the case of those of an aggravated type, where sleepless nights are followed by exhaustion and fatigue; but, as may be expected, under differing circumstances, every less degree of ill health is noticeable in cases of chronic eczema *genitalium et ani*.

Eczema of the female genitals is generally more acute than that of the scrotum, with the characters of *E. Rubrum*, and it very often extends from the vulva to a variable distance on the thighs

or lower part of the abdomen. I have never seen it extend backwards over the nates, though the perineum and anus will be involved when there coexist ascarides, hæmorrhoids, or rectal ulcers.

In women two additional causes of eczema should be ever borne in mind—viz., diabetes and the pruritus vulvæ consequent on various uterine, vulval, and vaginal conditions. As may be imagined, omission to recognise such causes cannot but fail in the treatment of the disease.

The following few instances of the disease in different phases will further elucidate the subject of its practical treatment:—

CASE I.—Joseph S., aged fifty-two, consulted me at the Skin Dispensary of the City of Dublin Hospital, for great and intolerable itching of the scrotum, of a fortnight's duration. His description of it was that it was "maddening," and that the sufferings he had experienced during an attack of rheumatic fever were nothing to be compared with those of the present illness. He was unable to sleep, as the heat of the bed rendered the pruritus unbearable, and the greater part of the night was spent either walking about or seated on a cane chair. Fortunately the season of the year (July) favoured such, otherwise, dangerous self-neglect, as he caught no pulmonary or other inflammation. He looked haggard and worn out. The scrotum was much thickened and fissured. When taken between the fingers, the skin was as thick and unpliant as leather. The eczema was chiefly at the under and posterior part, and extended but a short way on the adjoining thighs; the exudation was very considerable, matting together the hairs, and staining and stiffening the linen.

The exciting cause of this attack was not very evident, but presumably it was induced by the warm weather, and the want of proper cleanliness and changes of garments.

The treatment at first consisted in dusting the scrotum with a drying powder of the carbonate and oxide of zinc and starch, and the following sedative lotion to be applied at night after bathing the scrotum in very hot water:—

℞. Lin. calcis, ʒ iv.  
 Extr. bellad., gr. xij.  
 Zinci oxidi, ʒ ij.  
 Glycerini, ʒ i.  
 Aquæ calcis, ʒ iv.

As a rule, in very hot weather lotions and powders are preferable to ointments, both because the secretions may be too much checked and the basis of the ointment may turn rancid. This latter objection is removed when vaseline is employed.

In confirmation of the above remark, I may say that finding, after some improvement, the scrotum was continuing to be thick and indurated, I ordered a white precipitate ointment of the strength of 20 grains to the ounce. The patient, however, could not use it, and found the greatest relief from dusting the scrotum with calcined magnesia, having by him none of the powder I ordered at the first.

As his sleep was very much broken, sleeping draughts of chloral and liq. opii sedativi were required, and a diuretic mixture with colchicum was ordered.

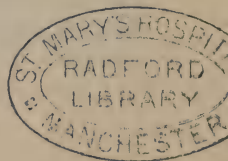
Under this treatment the patient's general health improved—he gained colour and flesh, while the local induration was absorbed, and the pruritus allayed, and he ceased his attendance altogether in about six weeks.

When the eczema is quite recent, and has not reached the stage of infiltration, it can be much more readily cured, as exemplified by the following:—

CASE II.—Mr. T., a clergyman, aged fifty, who had for many years suffered from local eczematous patches on the forearms, consulted me last December for eczema scroti, accompanied with much itching. The disease was limited to the anterior and under part of the scrotum, and did not extend backwards, and was in the early stage of redness and exudation. The application of a lotion similar to that given above, followed by the oleate of zinc, was sufficient to cure it in ten days.

CASE III.—The following is a case showing an equally rapid recovery. It is that of a lady, who a week after her confinement suffered from eczema rubrum vulvæ, due doubtless to the irritating discharges and the application of a wide binder. The disease had extended when I saw it four or five inches down the adjoining surfaces of the thighs. The surface was bright red, covered with small vesicles, and showing a considerable amount of wet exudation. The burning and tingling retarded the lady's recovery, as the smarting and pain, when the daily ablutions were practised, were most severe—"much worse," the lady said, "than having the baby." I at once interdicted the use of all soap, even the castile soap in use, and substituted oatmeal-tea, to half a pint of which were added a couple of tablespoonfuls of fine starch. The parts were then covered with pieces of old linen, soaked in the following cream:—

R. Lin. calcis,  $\frac{3}{4}$  iv.  
 Acid. hydrocyan.,  $\frac{3}{4}$  iv.  
 Liq. plumbi subacetat.,  $\frac{3}{4}$  ij.  
 Glycerini,  $\frac{3}{4}$  ij.  
 Aquæ rosæ ad  $\frac{3}{4}$  viij.—M. ft. lotio.





This lotion, when skilfully compounded, produces a cream of a most bland nature, and possessed with cooling and slight astringent properties. It proved most grateful in this case, allaying all the itching and causing a marked diminution of the inflammatory process. No other treatment was employed, and the case recovered in less than a week, and was not followed by any relapses.

In those cases where exudation is not a prominent symptom the preparations of tar are very useful, and I have seen much benefit follow its application. It is especially useful where the eczema is not in its acute stage, and is limited to a small area, and where the epidermis is thickened. In adults there are objections, owing to the hairs of the scrotum, to its use as an ointment, but it can be applied in the more elegant form of the liquor carbonis detergens, prepared by Wright—a preparation I have found useful in a variety of cases of eczema alone or in combination with zinc, ung. ammoniat. hydrarg., or sulphur. præcip.

In children there is less objection to the use of tar, and the following has been found by Dr. Bulkley, of New York, to be most beneficial in a case of eczema scroti in a child aged eight :—An ointment of equal parts of ung. picis and ung. simpl. was applied on strips of linen to the affected parts after they were soaked for twenty minutes in a hot bath, to which was added starch and a powder consisting of carb. potass. and bicarb. sodæ. Immediate and permanent improvement followed, all exudation ceased, infiltration disappeared, and the case recovered in a short time.

In eczema penis confined to the body of the organ, where there is much thickening with oozing fissures, I believe the best results will follow the constant application of the unguentum diachyli of Kaposi (composed of equal parts of litharge and vaseline) spread on strips of linen.

Much discretion is, however, requisite in the treatment of eczema, and a certain amount of self-confidence, so as not to fall into the very common error of over-medication on the one hand, or on the other the temptation to change the treatment if good results do not immediately follow it.

Pruritus ani is often associated with eczema genitalium, and in some instances it is the starting-point. It is well not to overlook this sequence, as there may be some fissure or ulcer of the rectum, or hæmorrhoidal trouble, which, acting as an excitant, will, if overlooked, render the treatment nugatory.

I have seen cases, and at present I have one such under my care,

where eczema is induced by the scratching of the fundament. The eczema may be at first strictly limited to the margin of the anus ; but if not treated carefully, or if neglected, it spreads to the perineum and under part of the scrotum, or to the vulva. One of the worst cases of pruritus vulvæ I have met with was in the case of a married lady, who came up from the country to consult me, where the whole perineum, adjoining portions of the thighs, and the labia, majora and minora, were in a state of eczematous inflammation. The pruritus was intense, coming on in paroxysms, and, commencing behind, culminated in the labia minora and clitoris. This lady's life was rendered most miserable, as sleep was next to impossible, and the irresistible itching of the pudenda, and the state of nervous excitability induced by it, precluded her enjoying the pleasures of society, or even partaking of her meals with the members of her own family. In this case the cause lay in the existence of rectal ulceration, and the occasional presence of ascarides. Attention to these troubles and suitable anti-pruritic applications cured the pruritus, and with it disappeared the eczema.

In many cases of eczema ani, I have recognised a strong gouty tendency, and have noted that the most moderate use of certain gout-giving liquors—port wine, beer, or porter—was invariably followed by either an aggravation or an outbreak of the disease.

By a regulated temperate dietary, into which fish may largely enter in the place of meat, by a total abstinence from port and brown sherry wines, brandy and all malt drinks, and by saline aperients with colchicum, I have reduced the disease to most moderate limits, and have cured it by the subsequent application of the oleat. zinci., or ung hydrarg. ammoniat. On the other hand, where I have endeavoured to treat it entirely locally (according to the teachings of Hebra and his school), I have failed to make more than a temporary impression upon this troublesome complaint.

In many cases where the nervous system is much depressed, and where the eczema seems to be partly, if not entirely, of nervous origin—similarly as eczema of the face is sometimes dependent on such a cause—phosphorus, either alone or in combination with iron and strychnia, forms a most useful adjunct. However, for some patients, in order to perfect the cure, it will be necessary to advise a complete change of air and associations, and a total cessation from the harassing cares of busy professional or mercantile life.

## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*St. Thomas's Hospital Reports.* Vol. X. London: J. & A. Churchill. 1880.

THE present volume is hardly equal to the average of its predecessors. Almost a third of the book is occupied with statistics of the medical, surgical, &c., departments, summarised from the Registrar's books, and some of the papers are by no means recent, one of them being a reprint from *The Medical Times and Gazette* of a clinical lecture delivered in 1852. Mr. Nettleship, however, has contributed an excellent monograph on diphtheritic ophthalmia. With regard to the relative severity of this disease he has collected all the cases published on the Continent. Thus, out of 190 cases recorded as diphtheritic ophthalmia by several observers in North Germany, 80 eyes were either lost or severely damaged (40 per cent.); in 8 French cases 6 eyes were lost (75 per cent.); in 20 English cases 11 eyes (55 per cent.). Notwithstanding percentages, he regards the numbers as proving that the disease is absolutely much commoner in North Germany and Vienna than elsewhere—a fact which he thinks the greater prevalence of granular lids may in some degree explain; and he desires to know from practitioners in Ireland (where trachoma is so common) whether cases presenting more or less diphtheritic characters are more frequent there than is generally supposed. Mr. Osborne, the chloroformist to St. Thomas's, has contributed "Annotations on Anæsthetics," which for their plain and practical directions would be most useful to every house surgeon. He prefers to give ether with Clover's apparatus as being less disagreeable to patients, the reason lying in the fact that the inhalation of their own expired air is gradually and imperceptibly changed to one heavily charged with ether, whereas other forms of apparatus necessitate a large volume of ether to begin with, which after having been poured upon the sponge, in its evaporation lessens in degree instead of increasing. Next to this he prefers Mr. Ormsby's apparatus, or the ordinary cone of

leather with a sponge inside. In the treatment of patients after anæsthetics he states that no food should be given for the first twelve or fourteen hours after operation, but soda water and milk or other cold drinks may be taken. Patients should not be roused, but allowed to gradually sleep off the effects of ether, a current of fresh air being allowed to circulate through the room. He has seen one death occur in St. Thomas's during the inhalation of ether. A man of forty-five years of age was being operated upon for a malignant growth in the rectum. The patient had been previously prepared, and after having been placed in the position for lithotomy, and the sphincter ani forcibly split, the heart's action stopped and was never resumed. The face was at first pallid, but afterwards became turgid. Ether had been given for twenty minutes, seventeen drachms being the amount used. He became quickly under the influence, the first stage of excitability being hardly shown at all. There was no vomiting. All means were tried to resuscitate the patient, but without avail. The *post mortem* showed œdema of the right lung and general pleural adhesions. The smell of ether was very noticeable in making sections of the lung. Heart was healthy and valves perfect. Mr. Osborne thinks it probable that traction upon the tongue has no effect in raising the epiglottis; therefore if this means fail to relieve the threatening asphyxia, tracheotomy must be immediately performed. Dr. Ord records a case of aneurism of the aorta treated by galvano-puncture. To the negative electrode of a Stohrer's 40-cell battery two needles were attached by separate wires provided with clamps, allowing of the ready connexion and disconnexion of the needles. Harelip needles were used. They were sheathed to within three-quarters of an inch of their points with sealing wax. One was thrust in near the axillary border of the tumour, the other on the sternal side, two and a-half inches distant on the same level. A moistened sponge connected with the positive electrode and held in contact with the skin over the tumour completed the circuit. From six to eighteen cells were used. The patient had neither fever nor suffering, and the tumour became smaller and firmer; but on the forty-fifth day after the operation signs of blocking of the innominate artery appeared, and four days subsequently he died. The obstruction was believed to be from thrombosis, the walls of the artery and its main branches being much degenerated. "Observations on the Diagnosis of Aortic Aneurisms," by the same writer, are full of clinical interest. It may just be mentioned that out of nineteen cases he observed



inequality of the pupils in ten. Mr. Kilner relates a fatal case of santonin poisoning, which will take by surprise many who seem to consider this drug a safe household remedy. A child, five years of age, swallowed a dose of six grains on an empty stomach. In a couple of minutes convulsions came on and insensibility followed almost directly. Death occurred in thirty-five minutes.

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*Easy Lessons in Sanitary Science.* By JOSEPH WILSON, M.D.; Medical Director U.S. Navy. Philadelphia: Blakiston. 1881. Pp. 68.

THE Lessons are too easy. Even the elementary information contained is given without regard to system. The paper and type are excellent, but the book is the work of a genial conversationalist rather than of either an engineer or a medical man.

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*Health Lectures for the People. A Series of Lectures Delivered in Manchester.* Manchester: Heywood. 1880.

DURING each of the two last winters eight public lectures were delivered under the auspices of the Manchester and Salford Sanitary Association. These have now been published in an attractively bound volume. Amongst the lecturers are Dr. Jules Dreschfeld, Dr. A. Ransome, Dr. Humphreys, and Dr. Tatham. The subjects are explained popularly and practically, in a way well calculated to awaken an intelligent interest. We observe the Manchester Sanitary Association are, at least, one point ahead of the sister association in Dublin, inasmuch as they possess a House Inspection Department, with a Sanitary Engineer attached. We hope the Dublin Sanitary Association may yet see its way to add this to its other useful functions.

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*Atlas of Histology.* By E. KLEIN, M.D., F.R.S.; and E. NOBLE SMITH, L.R.C.P., M.R.C.S. With 48 coloured plates. London: Smith, Elder, & Co. 1880. 4to. Pp. 448.

ON two former occasions we called the attention of our readers to this remarkable work as its parts were in course of publication, and now, while announcing its completion, we have to offer to its authors and publishers our hearty congratulations on the happy termination of their labours. In the later parts of the Atlas the

letterpress is much more copious than in the earlier fasciculi, and our space does not allow of our noticing in detail the numerous original views put forward; but in almost every chapter the reader will find something new, and, while we are far from accepting without question all Dr. Klein's views, we recognise fully their originality and suggestive character.

As to the illustrations, we have only to say that each succeeding number more and more fulfilled the promise which earlier ones gave of being, as we said on a former occasion, the most magnificent systematic work on animal histology in any language. We think that in both its scientific and artistic aspects it forms a very noteworthy addition to English medical literature.

### WORKS ON DISEASES OF THE SKIN.

*Atlas of Skin Diseases.* By LOUIS A. DUHRING, M.D. Part VII. Philadelphia: Lippincott & Co. 1880.

THE plates in this Part are fully up to the high standard hitherto maintained in the Atlas. The drawings represent—(a) pustular eczema, situated upon the face, scalp, and neck; (b) impetigo contagiosa, in a child; (c) papular syphilide, an excellent illustration; and (d), the last plate, is an admirable picture of lupus vulgaris, on the face of a woman thirty-five years of age. The several lesions common to this disease are well exhibited—viz., papules and tubercles of different sizes and shapes, flat, elevated patches of infiltration, and atrophic cicatrices.

The issue of this fine Atlas will add to the reputation of Dr. Duhring as one of the foremost of American dermatologists.

*On Diseases of the Skin, including the Exanthemata.* By FERDINAND HEBRA, M.D., and MORIZ KAPOSÍ, M.D. Vol. V. Translated and edited by WARREN TAY, F.R.C.S. The New Sydenham Society, London. 1880.

THE first volume of this great monograph was translated fifteen years ago by Dr. Hilton Fagge, and five years have elapsed since the fourth volume was issued to the members of the New Sydenham Society, who now have in its completed form an exhaustive treatise upon this important branch of medicine. Mr. Warren Tay, who was also responsible for Vols. III. and IV., has executed his laborious task of translating and editing with skill and good judgment. This volume, like the preceding one, is wholly from

the pen of Kaposi, and contains three chapters. The first chapter discusses cutaneous ulcers, which are thus classified:—

- I. Ulcers arising from circumscribed or diffused inflammation.
  - (a) Not contagious—1. Idiopathic ; 2. Symptomatic.
  - (b) Contagious (chancres).
- II. Ulcers associated with new growths.
  - (a) Lupus.
  - (b) Lepra.
  - (c) Carcinoma.
  - (d) Syphilis.

In the treatment of chancres Kaposi especially recommends one remedy as very efficient and convenient—viz., Emplastrum Hydrargyri, and he assures us that under its influence induration disappears quickly and completely.

The next chapter deals with the neuroses of the skin, restricting that term almost exclusively to pruritus; and the last chapter, which occupies two-thirds of the volume, is devoted to a full description of Class XII. of Hebra's system—i.e., Parasitic Diseases of the Skin, which form a large proportion of cutaneous maladies. By way of introduction to the study of the special diseases caused by vegetable parasites, we are presented with an elaborate and interesting *résumé* of the difficult scientific problems involved in the investigation of the pathology of these affections. A perusal of this section will show how complex the study of pathological mycology has become, owing to the searching inquiries within the past fifteen years of De Bary, Nägeli, F. Cohn, and others, and how far we are yet from being able to give a satisfactory account of the natural history and pathology of the vegetable organisms found upon the human skin. Of animal parasites a good description is given of pediculi, and of the affections they occasion, which, though unfortunately common, and not rarely to be met with in the upper ranks of society, sometimes escape due recognition, and are, consequently, treated inadequately. Kaposi recommends, as the cheapest and most efficient parasiticide, a mixture of commercial petroleum,  $\text{℥ iij.}$ ; olive oil,  $\text{℥ iss.}$ ; and balsam of Peru,  $\text{℥ iiss.}$  The hair is thoroughly treated, down to the very roots, with this application, and the head is covered with a flannel cap. After twenty-four to forty-eight hours, not only will the lice and their ova be destroyed, but also the crusts will be softened.

The engravings illustrating the animal and vegetable parasites

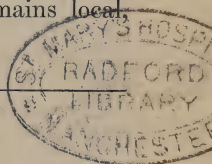
are deficient in clearness, and they contrast unfavourably with the engravings from the same plates furnished in Kaposi's recent treatise, "*Pathologie und Therapie der Hautkrankheiten.*" (Wien, 1879-80. Urban and Schwarzenberg.)

*Archives of Dermatology.* Editor, L. D. BULKLEY, M.D. Philadelphia: Lippincott & Co. April and July, 1880.

THIS excellent periodical continues to be conducted with spirit by its energetic editor, and the present numbers contain records of some interesting cases of rare diseases of the skin. The digest of literature is, as usual, very carefully worked up, and is invaluable for reference.

*On the Nature and Pathological Histology of Psoriasis.* By Dr. A. R. ROBINSON. New York. 1878.

THIS is a contribution of considerable value and interest, and it is admirably illustrated by drawings made by Dr. Robinson from his own preparations. Dr. Robinson seems to have fairly made out his point—viz., that psoriasis is a local disease, and that it consists in a hyperplasia of the Malpighian layer of the skin, there being no special hypertrophy of the papillæ, at least in the earliest stage. The disease is local at the commencement, always remains local, and never affects the general system.



### PAMPHLETS.

1. *A new Method of permanently Removing Superfluous Hairs.* By L. D. BULKLEY, M.D. 1878.
2. *On the Nomenclature and Classification of Diseases of the Skin.* By L. D. BULKLEY, M.D. 1878.
3. *Three Cases of Syphilitic Muscular Contraction.* By A. VAN HARLINGEN, M.D. 1880.

1. DR. BULKLEY proposes, after extracting the hair, to penetrate the follicle with a small, three-sided needle, and to endeavour to excite such a degree of inflammation as will seal the follicle throughout its entire length.

2. It is gratifying to note that in a recent treatise on skin diseases, by a Danish physician, Dr. Bulkley's classification is adopted as the clearest and best system hitherto proposed.



3. Dr. van Harlingen reports three cases of one of the rarer lesions due to syphilis—viz., muscular contraction. The prognosis is favourable in any case, as the affection appears to tend to spontaneous gradual recovery. But its course may be much abbreviated, and the occurrence of relapses obviated, by regular and continuous treatment.

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*The Chinese Opium-Smoker.* London: S. W. Partridge & Co. 1881.

THIS pamphlet, illustrated by a beautiful series of twelve pictures, is not published for profit, but with the hope of increasing public interest in a subject of great national importance—the opium trade with China.

The following account of the origin of the pictures is contained in a recent number of *The Friend of China* :—

“The Chinese people have expressed their detestation and dread of the opium-vice in ballads, tracts, wall-placards, &c., which are frequently printed and circulated at the expense of benevolent individuals or societies. The aid of the artist and the engraver is invoked for the same purpose. Series of large coloured pictures of the opium-smoker's career, from the ruddy youth inhaling his first pipe, to the living skeleton clothed in rags and the ghastly corpse, are painted and sold to be hung up in their houses, and warn the young against the deadly poison. Sometimes a sheet of wood engravings is printed for distribution, or the pictures are paged in a tract. About four years ago the Chinese Anti-Opium Society of Canton republished a set of these pictures, with descriptive text. An English gentleman, who has resided for some years in Hankow, was struck by the thought that people in England can be reached by pictures who will not read ordinary anti-opium literature. Accordingly he sent home this series, coloured by a Chinese artist, and it is published with explanatory text by Messrs. S. W. Partridge and Co., of Paternoster Row, and may be had for sixpence. The pictures are beautifully executed, and as specimens of Chinese art are worth many times the money.”

We cannot but join in the hope that this pamphlet, published under the auspices of the Anglo-Oriental Society for the Suppression of the Opium Trade, will have an extensive sale, and be the means of opening the eyes of thousands to the evils which our nation is fostering by its support of the opium trade. The pamphlets will be obtainable at Messrs. W. H. Smith & Sons' railway book-stalls.

## PART III.

### HALF-YEARLY REPORTS.

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#### REPORT ON PHARYNGOLOGY, RHINOLOGY, AND LARYNGOLOGY.

By KENDAL FRANKS, M.D., Dub.; F.R.C.S.I.; Surgeon to the Adelaide Hospital; Surgeon to the Throat and Ear Hospital, &c.

*Extirpation of a Naso-pharyngeal Polypus by the Palatine Method.*—This case was communicated to the Société de Chirurgie de Paris by Cruveilhier (*Bulletins et Mémoires*, April 5, 1880). A young man, aged seventeen, had suffered for over two years from obstruction of, and frequent hæmorrhage from, the right nostril. On examination, a tumour was found, occluding the right nostril and filling the posterior part of the nasal fossæ, where it could be felt by introducing the finger behind the soft palate. The palatine arch appeared convex. There was no deformity of the face, nor protrusion of the right eye, but there was some slight epiphora. The palate was divided in the middle line, exposing the polypus, which was then seized by the forceps and extracted. The hæmorrhage was so excessive that the patient fainted. The polypus was very large, and presented two distinct lobes; one was attached to the pterygoid plate of the sphenoid, the other to the basilar process of the occipital bone, which was so eroded that it was feared the tumour had penetrated into the interior of the skull. The patient progressed steadily, and was discharged a month and a half afterwards. The gap in the palate—which extended almost as far forwards as the anterior palatine foramen—was closed about a year later by Fergusson's method. Owing to the constant flow of mucus down the back of the throat, which had existed since the extraction of the tumour, the union did not take place by the first intention; but by bringing the granulating surfaces together as much as possible, and filling up the gap that remained with the uvula, a restoration of the palate was finally accomplished.—(*London Med. Record*, Aug. 15, 1880.)

*Transverse Incision of the Soft Palate, as a Preliminary Operation for the Extirpation of Pharyngeal Polypi.*—Dr. Boeckel, of Strasbourg (*Bulletin de la Société de Chir.*, 1879), has divided the soft palate in four cases. This gives a very complete view of the superior part of the pharynx and of the base of the skull—especially if the patient is placed in the recumbent position, in such a manner that the head hangs over the edge of the table (Rose's position). This position allows the patient to be kept under the influence of the anæsthetic during the whole course of the operation. The blood, instead of entering the respiratory passages, escapes by the nose, and provides, moreover, against syncope, which might otherwise come on after a sudden loss of blood.

The transverse incision may be made from 2 to 3 centimetres long ( $= \frac{3}{4}$  in. to  $1\frac{1}{8}$  in.), according to the age and development of the person. If necessary, a small incision may be made from either extremity, at right angles, or obliquely to this incision. This may be from 6 to 8 millimetres ( $= \frac{2}{9}$  to  $\frac{3}{10}$  of an inch). The elasticity of the velum, moreover, permits the operator to draw the rent open with a blunt hook sufficiently to introduce the left index finger by the side of the instrument which is to attack the polypus. This is an important consideration, for, with the first stroke of the rasparatory, the blood flows freely, and obscures the field of operation; the finger must then act as guide to the instrument.

The rasparatory which Boeckel uses is a sharp spoon, the cup-shaped end of which makes an angle of  $135^\circ$  with the shaft. This latter is movable in the handle, into which it is fixed by a screw, in such a way that it can be lengthened or shortened as required. Owing to the angle which the rasparatory has at its end, it is very convenient for scraping the base of the skull, from which it easily detaches the periosteum, by movements from behind forward. According to the position of the growth, this instrument can be introduced either through the palatal incision or through one of the nostrils.

After the scraping, the bleeding is arrested by pressure for some minutes, and then caustics may be applied to the seat of its origin. Boeckel used pledgets soaked with a solution of chloride of zinc; but the solution having cauterised the edges of the palatal wound and prevented immediate union, he substituted in its place the galvano-cautery. The shaft of the instrument is surmounted by a cylindrical cupola of porcelain the size of a

goose-quill, which is heated by a spiral of platinum, and all is covered close up to the top with cotton, to protect the nasal cavity from the heat. It is then well greased and introduced cold. Its position is recognised through the palate wound, and the circuit then completed.

The operation is brought to a close by suture of the incision in the velum, unless the wound is kept purposely open in order to keep a watch on the pedicle. Boeckel at first divided the operation between two successive days—the first day incising the palate, and postponing the ablation of the growth till the following day; but now he sees no reason why the whole operation should not be completed at one sitting, and even recommends this procedure in the case of adults, whom the dread of two operations might ill-dispose to undergo a second.—(Hayem's *Revue des Sciences Médicales*, Oct., 1880.)

*Treatment of Diphtheria by Carbolised Camphor.*—M. Peraté has for the last two years used carbolised camphor for the treatment of diphtheria. He paints the surface with a pencil dipped in the following mixture (*Bulletin de Therapeutique*, July 15, 1880):—Carbolic acid, 9 grammes; camphor, 25 grammes; alcohol, 1 gramme; diluted with equal parts of oil of sweet almonds. The paintings are made every two hours in the day, and every three hours in the evening; then, after some days, they are divided by periods of three, four, or five hours, according to the improvement of the patient. These paintings are made over the whole extent of the false membranes, and with troublesome children the pencil is plunged as deeply as possible to the bottom of the throat, being, of course, previously drained. The mixture has an exceedingly disagreeable taste, to which, however, the patient soon becomes accustomed. M. Peraté has been very successful with this plan of treatment.—(*London Medical Record*, Aug. 15, 1880.)

*Paralysis of the Posterior Crico-Arytenoideus.*—Burow (*Berlin. klin. Wochenschrift*, Aug., 1879, and Dec., 1879) draws attention to a case of paralysis of this muscle, for which he performed laryngotomy; but death ensuing from putrid bronchitis, he gives the details of the autopsy which he was enabled to make. The first case of this affection recorded was published by Gerhardt in Virchow's Archives XXVII., in 1863. Since then the number of cases have multiplied, and over fifty cases have been published up to the present. But autopsies are still rare, and it is this fact which gives importance to the following case by Burow.



Portefaix, aged sixty-two, suffering from spinal curvature such that, when he stands upright, the spinous processes of the cervical region form an almost horizontal line, and the chin rests almost on the sternum. The paralytic affection began suddenly four months previously with dyspnœa, which accompanied inspiration, expiration being quite normal. The stridor accompanying each inspiration is as intense during sleep as when awake, and can be heard at a great distance. Speech is quite normal; neither voice nor cough are hoarse. Inspiration is prolonged; expiration short and rapid. Respirations, 25 to 30 per minute; pulse, 84; temperature normal. The larynx moves considerably and sinks deeply during each inspiration. Owing to the shortness of the anterior region of the neck—the result of the spinal curvature—the trachea is concealed completely behind the sternum, so that the upper border of the latter is on a level with the inferior border of the cricoid cartilage—a circumstance which in no way facilitates the opening of the respiratory canal. The thorax is pigeon-shaped. There is tucking in at the epigastrium and above the clavicles. Laryngoscopic examination presents some difficulty, owing to the antiflexion of the head. It shows that there is neither swelling nor inflammation about the glottis. The arytenoid cartilages are closely approximated. The vocal cords almost touch each other during inspiration, there being only a narrow chink perceptible in the middle third between them. This chink enlarges from  $1\frac{1}{2}$  to 2 millimetres ( $\frac{3}{8}$  to  $\frac{4}{5}$  of an inch) during expiration, whilst the anterior and posterior portions of the cords remain immovably adducted.

As attempts to introduce dilating instruments only increased the dyspnœa, Burow practised laryngotomy without chloroforming the patient, who remained in a sitting posture. The incision could only be made over the crico-thyroid membrane and the cricoid itself. This ossified cartilage had to be partially resected in order to gain sufficient space for the cannula.

The evening of the operation there appeared the typical Cheyne-Stokes respiration, which later on was replaced by acceleration of the respiratory efforts (50 to 60 per minute); at the same time intense collapse. On the 3rd day the temperature was  $102\cdot7^{\circ}$ , and there were signs of general bronchitis. In spite of antiseptic inhalations the purulent expectoration remained fœtid; emaciation, anorexia, involuntary stools, and unconsciousness, followed, and death took place on the 15th day.

The *post mortem* was made seven hours after death, and showed

the following conditions:—Putrid bronchitis and suppurating lobular pneumonia with diffuse hepatisation; gangrene of some of the pneumonic centres. On the right side, below the subclavian artery, and on a level with the origin of the recurrent laryngeal nerve, and on the left side, above the arch of the aorta, are found hypertrophied glands, the largest of which is about the size of a nut; but these glands, which surround the nerves, do not involve them at any place, and microscopically these nerves are quite normal. There is considerable atrophy of both crico-arytenoidei postici, equally marked on each side. Under the microscope they show a disappearance of the transverse striations, and fatty degeneration of the fibres. The rest of the larynx is normal. Hence the cause of the muscular paralysis remains unknown. Moreover, even in cases where the recurrences are engaged, it is difficult to explain why the nerve fibres going to the posterior crico-arytenoids are alone engaged, and the symptoms of pressure on the recurrent laryngeal nerves are quite different.

The inspiratory dyspnoea, accompanied by stridor, forming a strong contrast with the natural expiration and a voice most frequently clear—the slow increase of the symptoms as long as the preponderance of the antagonistic muscles does not threaten to transform the dyspnoea into asphyxia—such are the characteristic phenomena of bilateral paralysis of the dilators of the glottis, which are easily recognised even without a laryngoscopic examination.

A comparative study of the 46 cases of paralysis of the posterior crico-arytenoids which Burow has found in medical literature discloses the following facts:—The age varied from two to sixty-eight years, without any marked predominance at any intermediary epoch. On the other hand, sex forms a predisposing cause, as 25 were males, and 16 females.

As ætiological antecedents, former catarrhs are mentioned ten times; syphilis, six times; hysteria, five times; pressure on the recurrences, four times; typhoid fever and diphtheria, each three times; perichondritis, twice; finally, whooping cough, pneumonia, a subglottic polypus, erysipelas of the face, each claim one, as do also violent muscular efforts.

The duration of the disease from the time it came under medical observation varied from 2 days to 28 years.

The voice was unaffected in 17 patients; in 13 it was hoarse; in 2 cases it was feeble; and in 2 more there was complete aphonia.

The medications employed have been—galvanism, subcutaneous

injections of strychnine, laryngotomy or tracheotomy, anti-hysterical and anti-syphilitic medicines.

There have been 14 recoveries, 8 cases of improvement, 11 cases in which there was no amelioration, 9 cases died, and in 8 of these there were autopsies. Tracheotomy was performed 24 times.

The following lesions were found at the autopsies:—1 case of atrophy of the roots of the pneumogastric nerves; 4 cases of simultaneous atrophy of the muscles and nerves involved; 3 cases of atrophy of the muscles without any lesion of the nerves.—(*Revue des Sciences Médicales*, Hayem, Oct., 1880.)

*The Removal of Intra-laryngeal Neoplasms.*—Professor Paul Bruns, in a monograph on this subject, compares the methods of removing neoplastic growths in the larynx, *per vias naturales*, with the various extra-laryngeal modes of proceeding. His views are based on an examination of records of more than one thousand cases of operation through the mouth, and ninety-seven through the external incision. “This pamphlet deserves the due consideration of those surgeons who insist upon making the external incision rather than inviting a specialist to attempt endo-laryngeal procedure, for if the surgeon be skilled in intra-laryngeal manipulation it is a matter of certainty that he will attempt that method first, and, in all probability, with sufficient promise of success to cast the external procedure entirely out of consideration.” Bruns concludes that thyrotomy is not a difficult operation, nor one necessarily menacing to life, but it greatly endangers the integrity of the voice; that it should not be performed until after failure by a skilled laryngoscopist to remove the neoplasms by the mouth; that incisions through the thyroid cartilage between the vocal bands should always be avoided, if possible, on account of its resultant injury to the voice, and the attempt be made to get along with simple incision of the crico-thyroid membrane, or with the further division of the cricoid cartilage, and, if requisite, the upper ring of the trachea; that in urgent cases threatening asphyxia, tracheotomy should be performed as an initial measure, and attempts be made subsequently to operate through the mouth, or, if these attempts fail, to operate through the wound, extending the incision to the lower border of the larynx if necessary; and that in cases of malignant growth, especially carcinoma, either operation is injudicious.

Dr. Edward Löri proposes to remove laryngeal growths by means of catheter-polypotomes. These instruments are metallic

catheters, with their eye-holes located at various positions around their distal extremities. In this way a series of instruments will afford the opportunity of sweeping any accessible portion of the surface of the larynx. The edges of the eye-holes are sharpened so as to cut through any soft morbid growth which may become caught within them. These instruments cannot inflict any injury to the laryngeal walls, and do not impede respiration during their employment.—(*Amer. Journ. Med. Science*, Jan., 1881.)

*New Methods of Removing Intra-laryngeal Growths.*—In the *Berliner klinische Wochenschrift*, No. 5, 1880, Professor Rossbach describes a new method of removing intra-laryngeal growths, which he considers preferable, in many cases, either to the intra-laryngeal operation, in which the growth is removed by various forms of knives, forceps, &c., through the mouth with the aid of the laryngoscope, or to the extra-laryngeal operation or thyrotomy, in which the thyroid cartilage is split in the middle line and the growth removed through the wound. The new operation is a subcutaneous one. Professor Rossbach states that it is easily and quickly performed, is almost painless, requiring no anæsthetic, is attended by the escape of only a drop or two of blood, and is quite devoid of danger; the wound, moreover, heals very rapidly, and requires no after-treatment. A small spear-pointed knife is introduced through the middle line of the thyroid cartilage a little below the notch, and is pushed through the mucous membrane into the larynx. With the aid of the mirror the knife is then guided to the growth, and its pedicle or base cut through. After the first prick of the skin the patient experiences no further pain; he does not feel the entrance of the knife into the larynx, and its presence there causes neither coughing nor gulping. Should, however, any such spasmodic movements accidentally occur, the knife need not be withdrawn, but may be allowed to remain passively in the larynx—the handle being merely supported by the thumb and forefinger placed lightly on the thyroid cartilage, so that during the up and down movements of the larynx the hand, knife, and cartilages move as one piece. With this precaution wounding of the mucous membrane will be prevented. Professor Rossbach has operated by his method on two patients with entire success. He has also demonstrated, in a large number of experiments on animals, the ease with which the knife can be manipulated in the larynx when introduced subcutaneously. In this way, he states, he has removed in animals both vocal cords, and in one case



has separated the whole of the mucous membrane from the interior of the larynx. Professor Rossbach was led to devise his operation in consequence of having failed to remove a polypus from a patient who could neither tolerate the presence of instruments in the larynx when introduced in the intra-laryngeal manner, even after months of practice, nor would submit to thyrotomy. The advantages of this operation in such cases he considers obvious, but he also thinks it preferable in a large number of cases usually treated in the intra-laryngeal way, since it is more easily performed than the latter operation, and causes much less inconvenience to the patient.—(*Amer. Journ. Med. Science*, July, 1880.)

*Laryngeal Tumour.*—In *The Canada Lancet*, 1880, Bauer relates the case of a lady, aged twenty-nine, who had experienced difficulty in respiration for a year. The least exertion brought on severe attacks of dyspnœa, and attempts to swallow either solid or liquid food caused violent fits of coughing and strangulation. A large, smooth, regular, and unyielding mass was discovered by the laryngoscope, filling the entire of the posterior part of the laryngeal space below the vocal cords. The left cord was fixed near the median line and drawn downwards; the right moved freely. Tracheotomy was performed, and the thyroid cartilage divided in the middle line; but the growth, which was thought to be an enchondroma, was found immovably connected by a broad base with the cartilage (?) of the left side; and, as its removal would have necessitated the excision of the entire larynx, the operation was abandoned. The tracheotomy tube was left in, and the patient could now swallow with comfort and breathe easily.—(*London Medical Record*, August 15, 1880.)

*Syphilitic Laryngitis in Childhood.*—Erös calls attention to the essential differences between syphilitic laryngitis in children and the same disease in adults. He reports the case of a little girl, aged three and a-half years, who presented on admission into hospital indisputable signs of syphilis, such as a condyloma near the anus, specific eruption, mucous patches in the corners of the mouth, on the inner surface of the lips, and on the tonsils. The nasal mucous membrane was tumefied and injected. The sub-maxillary, cervical, and inguinal glands were enlarged. Previous to admission she had suffered for six months from whooping-cough, and the hoarseness, which began then, had increased till it amounted to aphonia, and she was now brought to hospital for frequent suffocative attacks. The face was darkly cyanosed; the epiglottis

and aryteno-epiglottic folds were found to be red and tumefied. Both vocal cords were swollen, and of a violet hue—the left one being nearly twice as thick as the right—and on its free edge there was a dark red tumefaction; no doubt gummatous. Mercurial inunction was employed for eight days, and, thanks to the use of chlorate of potassium, there was no stomatitis. All the severe symptoms rapidly abated, as did also the lesions of the vocal cords. In two months and a-half the child was almost quite well, although when admitted tracheotomy seemed urgently required. The author calls attention to the fact, that laryngeal manifestations in hereditary syphilis are the same as those of the acquired disease in adults, but they have a graver significance, especially if complicated by an exacerbation of a pre-existing inflammation in the mucous membrane of the respiratory tract.—(*Wiener medizinische Wochenschrift*, July 3, 1880.)

*Double Epiglottis and Double Voice.*—Dr. Trench (*Annals of Anatomical and Surgical Society of New York*, July, 1880) contributes the case of a man, aged thirty-seven, who came under his care for weakness of voice. He could command with ease the chest and the falsetto registers, and had a baritone and a falsetto voice. He could speak in two voices, and said he used either according to habit or association. He had gained the extra voice when sixteen years of age. In singing he always used the high voice, as he could command a greater compass with it. The compass of the low voice was so limited that he could only reach the high notes of an ordinary song with it. On examination, the epiglottis was found to be double, the right half of the cartilage overlapping the left to a slight extent. The division in the mucous membrane extended down to the median glosso-epiglottic fold, but the division in the cartilage evidently extended further, as, during the production of the falsetto voice, the lateral halves moved inwards, as if they were hinged in the middle. The vocal cords and other structures were naturally formed. Dr. Trench thought it very probable that the double formation of the epiglottis had something to do with ability to command two voices; for, when the sides of the epiglottis were drawn in during the formation of notes in the falsetto register, the calibre of the laryngeal cavity decreased to a considerable extent, and thereby probably rendered the production of the falsetto voice very easy.—(*London Medical Record*, November 15, 1880.)

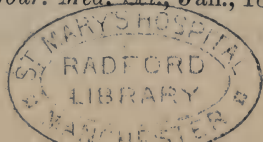
*Treatment of Laryngeal Phthisis.*—Bosworth recommends a

preliminary treatment, with the object of cleansing the parts, with the following solution :—Carbolic acid, drops 12 ; bicarbonate of soda, gr. 24 ; biborate of soda, gr. 24 ; glycerine, ʒi ss. ; rose water, ʒ viij. After this he used anodynes to allay pain, and then he has recourse to astringents, such as 10 grs. to the ounce of sulphate of zinc ; 2 to 5 grs. of chloride of zinc, or nitrate of silver, or tannin ; 4 grs. in 30 of glycerine. Later on he employs iodoform, which is easily borne and is rarely painful ; this may be used in powder, or as a saturated solution in ether, or combined with tannin and morphia.—(*New York Med. Record*, May 17, 1879.)

*Tracheotomy in Infants.*—It is well known that tracheotomy, for whatever reason it be undertaken, is always more fatal in early infancy than in more advanced years. One of the youngest of the successful cases on record is interesting, not only on account of the age, but also because the operator was the father of the little patient. We refer to the well-known case in which M. Scoutetten, of Strasbourg, in 1830, successfully operated on his own infant, aged six weeks. Since this date some other cases of early tracheotomy have been recorded—Mr. Joseph Bell, of Edinburgh, reported a successful case at six months and a-half ; Mr. Tait, at seven months ; Dr. Greenfield, at ten months ; Mr. Cooper Forster, at eleven months. There are, doubtless, many other cases, if we could collect them, of successful operation in very young subjects ; the recollection of them will help to reconcile those who have hitherto abstained from operating simply on the ground of youth.

Another successful case in a very young infant (aged nine weeks) is recorded in the *Berliner klinische Wochenschrift*, No. 40, 1880. Dr. H. Steinmeyer, of Brunswick, was sent for to see a child who was said “to be ill with diphtheria and choking.” The infant came of a phthisical mother. It was normally developed, and during the first four weeks of its life had always been quite healthy. In the fifth week it had had abscesses near the anus, and others on the palms of its hands. In the eighth week a cough had come on, and it daily became worse and emaciated, and difficulty of breathing set in. This latter symptom persisted, and on its becoming very urgent, Dr. Steinmeyer was sent for. When first seen, the usual symptoms of laryngeal stenosis were very manifest—viz., cyanosis, with drawing down of the facial muscles during inspiration, which was loud and hoarse ; expiration was short and inaudible. There was great retraction in the

epigastric regions. Nothing abnormal, beyond oïdium albicans, could be detected in the mouth or pharynx. The epiglottis, when examined by the finger, did not appear to be sufficiently swollen to be the cause of the obstruction. A laryngoscopic examination could not be satisfactorily made. On the exterior surface of the neck, over the right thyroid cartilage, and in size corresponding with it, a very slight swelling was detected; it was only appreciable to the eye by carefully comparing the two sides; it did not fluctuate. The temperature was 103° F., and the pulse could not be counted. Tracheotomy was decided upon. But the exact cause of this obstruction could not be made out, although an abscess in the neighbourhood of the larynx was suspected. The operation was a very difficult one, and lasted an hour. The trachea was no larger than a goose-quill; it was displaced considerably to the left of the median line. An anæsthetic does not appear to have been used; the operator, "on account of the infant's restlessness," found great difficulty in introducing the cannula. The respiratory trouble ceased immediately on opening the trachea; all cyanosis quickly disappeared, and the infant rapidly recovered. It could not, however, take the breast, on account of coughing. Four days after the operation, the temperature being still 103° F., the child became very restless. The swelling over the thyroid cartilage was more manifest, and the superimposed skin somewhat reddened. An incision into it through the tracheal wound let out pus, and, on enlarging the opening on a director, a very considerable amount of pus was evacuated. The cough continued troublesome; attempts to remove the cannula were unsuccessful. The temperature was normal. After the tenth day, the child, which up to this time had continued to improve, began to get worse; its food (milk) regurgitated through the nose. There was nothing appreciable to account for this unfavourable change. On the thirteenth day after the operation, however, suddenly, as the child was trying to scream, a quantity of foetid pus was discharged through the mouth, while some more issued from the tracheal wound. Very shortly after this the child began to cry audibly. The cannula was removed on the following day, and complete recovery was very soon established. It will be obvious that the case was one of retro-pharyngeal abscess. The diagnosis is often impossible, and, under the circumstances, tracheotomy appears to have been the only resource.—(*Amer. Jour. Med. Sci.*, Jan., 1881.)





## REPORT ON ANÆSTHETICS.

### PART III.

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(Concluded from page 239.)

It would be impossible that we should notice all those anæsthetics which from time to time have been tried, most of which, in some one respect or other, have been found wanting. We furnish a table of some, compiled from Dr. Rottenstein's treatise:—

#### SOME ANÆSTHETICS WHICH HAVE BEEN SELDOM EMPLOYED.

*Chloride of Ethylene*, *Dutch Oil* ( $C_4H_4Cl_2$ ).—Discovered by Deimann, Troostwyk, Bondt, in 1849; experimented with by Simpson, Snow, Nunneley; acted with less certainty than chloroform; occasioned vomiting.

*Aldehyde* ( $C_2H_4O$ ).—Discovered by Döhereiner in 1849; recommended by Poggiall; tried by Simpson, and abandoned from its effects on the respiration (constriction of chest and violent cough).

*Acetic Ether*.—Tried by Tracy, Sigmund, and Bouisson. No advantage over sulphuric ether; more dangerous.

*Acetone* ( $C_6H_6O_3$ ).—Simpson observed cough and dyspnœa after its inhalation.

*Hydramyl*.—Experimented with largely by Richardson, who anæsthetised himself with it, finding it agreeable and free from unpleasant effects. Consciousness was lost in a few seconds.

*Iodide of Amyl* ( $C_{10}H_{11}I$ ).—Little satisfactory (Richardson, Snow, Bigelow, Nunneley).

*Chloride of Ethyl* ( $C_2H_5Cl$ ).—Employed successfully by Flourens, Tracy, and others.

*Bromide of Ethyl* ( $C_2H_5Br$ ).—Used by Nunneley in 1849; reported favourably of; *rarely causing vomiting*. (See first part of this report for a full description of its effects.) Mr. Clover found the bromide of ethyl very unsatisfactory, causing frequently vomiting and headache, and its odour very unpleasant.

*Azote*.—Tried by J. Murray and Burdon Sanderson. Pulse

and respiration at first frequent, afterwards becoming more regular. Nothing particular noted.

*Carbonic Acid*.—Tried once on a patient who died.

*Lycoperdon Protheus, Fumes of*.—Richardson used these fumes. Cardiac and respiratory movements weakened; consciousness returned at once on ceasing the inhalation; the body was cold, the pupil immovable, heart movements scarcely perceptible.

*Sulphuret of Carbon* ( $\text{CS}_2$ ).—Simpson used it on himself and others. There were some severe head symptoms.

*Amylene* ( $\text{C}_5\text{H}_{10}$ ).—Discovered by Balard; used as an anæsthetic by Snow (1836); caused two deaths.

#### COMBINATIONS.

*Chloral and Chloroform combined*.—Forné thought that the effects were the same as when morphia and chloroform were combined—preventing excitation and increasing the effect. Dolbeau and Demarquay think it dangerous. Opinions vary, but the combination would appear uncertain and dangerous, whether given by the mouth or rectum (Hastings).

*Morphia and Chloroform*.—Claude Bernard and Nussbaum were the first who used morphia subcutaneously previous to and during the administration of chloroform. The Medical Commission at Versailles conducted experiments on animals to determine the value of this new method of anæsthesia. Rigaud and Sarrozin (Strasbourg) also tried it and came to these conclusions:—The dose of morphia must be small (5 to 15 milligrammes), given thirty to forty minutes before the chloroform; useful in long operations; contraindicated if we require the assistance of the patient, and in operations about the mouth; it has a good effect on the patient after the influence of the chloroform has passed off. Labbé and Guyon agree in these conclusions. Demarquay and others objected to the morphia as causing a great fall in temperature, pulse, and respiration. Poncet and Chauvel likewise relinquished it in military service. König used the morphia in some hundreds of cases (1–2–3 centigrammes), principally in inebriates and old tipplers; also when the chloroform inhalation could not be continued to the close of the operation. Dr. Rottenstein does not consider this complication of the injection of morphia necessary. On the other hand, Tiersch operated for removal of the upper jaw; a degree of consciousness remained, the patient could spit out the blood, and a certain degree of voluntary power remained.

*Morphia and Ether.*—Vomiting, according to the experience of Kappeler, occurred in nine out of twenty-five administrations; twelve failed.

*Chloral and Ether.*—Though better than the combination of morphia and ether, still it offers no special advantages over the ether given alone.

Dr. Rottenstein reviews the different means we possess of producing local anæsthesia. Both Larrey and Hunter understood the influence of cold; James Arnott employed ice, this was specially used in dental operations, Morrisson inventing an apparatus for its employment in these. Dr. Rottenstein has contrived an appliance for the same object. Francis, of Philadelphia, used electricity; Rottenstein tried the intermittent current; Schiff advised the use of the constant battery; the results appear uncertain. It has been abandoned in America. Simpson, Nunneley, Roux, Hardy (Dublin), and Guérard, performed successful operations by means of local anæsthesia. Richardson, however, is the modern scientist to whom we are most indebted for his experiments with ether under compression of the air and the production of a freezing jet six degrees below zero. The application of Richardson's spray in cases of abscess, fistula, hæmorrhoids, &c., is widely acted on. "Some conditions (Rottenstein) are indispensable; the ether should be of a specific gravity not exceeding 0.723; it should boil in the palm of the hand; placed on the tongue it should evaporate rapidly, leaving no other sensation than that of a slight cold; on a piece of filtering paper it should evaporate, leaving neither moisture nor odour; directed in a jet on the bulb of a thermometer it should lower the mercury to six degrees below zero, and produce there a bed of snow by the condensation of the air; on the back of the hand it should produce a slight deposit of white frost, followed by a general pallor of the skin and a complete insensibility." The truth, however, is that the pain produced in the freezing is often as great as that incurred in the operation. At the same time if we avoid, in certain cases unsuitable for general anæsthesia, the risk which is involved in the use of ether or chloroform, while we prevent pain and save the patient from shock and hæmorrhage, local anæsthesia should be more frequently resorted to than it is. In neuralgia and in certain operations M. Adrian used chloro-carbon, differing from chloroform in composition by one equivalent of chlorine. It is less stimulating and irritating than chloroform.

It can be administered internally suspended in oil of sweet almonds and gum arabic (Vée), and applied externally in the following formula:—Axungia, 20 grammes; cera alba, 4 grammes; chloro-carbon, 6–8–12 grammes. Dr. Rottenstein claims to be the first who recommended the employment of chlor-ethyl in local anæsthesia. Discussing the conclusions arrived at by Tripiér, and those which Pflüger, Ducrot, Du Bois-Reymond, and Kronecker derived from their experiments on the effect of the electrical excitations of nerves, and the laws regulating electrotonus—anelectrotomique (positive), diminished contractility and excitability, cathelectrotomique (negative), excitability and conductivity increased—which explain the occasional augmentation of pain when the negative instead of the positive pole of the battery (induction) is applied to a sensitive nerve, Dr. Rottenstein quotes the observations of Dr. Vigoroux on the use of the induced current for anæsthesia. He considers that the power of electrical anæsthesia is increased in the persons who are readily influenced by metals (metallotherapy), magnetism, galvanism, mesmerism, &c.—in short, the hysterical temperament. Also it acts by diminishing sensibility in nerves, exhausting this if it be applied for a sufficient time and in sufficient force. For dental operations the compound called gasoline has been successfully applied to the gum; also camphor (1 pt.) and ether (8 pts.) before extraction (Turnbull); rhigolene, the lightest of known liquids, sp. gr. .625, boiling point 70°, obtained from the distillation of petroleum; and a mixture of sulphuric ether (3j.) and camphor (3iv.) act as local anæsthetics.

Dr. Setamendi (*Archives de Physiologie*, Nov., 1875) advises an incision (not through entire skin) from eight to ten millimetres long, after the ether spray is applied for two minutes, the object of the superficial incision being to induce contraction of the vessels, which tends to produce a zone of complete anæmia and anæsthesia (Turnbull, p. 51). But the most extensive application of local anæsthesia has been made by Dr. B. W. Richardson in the removal of a breast with scissors—the part having been first partly frozen with pure ether, and then with a mixture of ether .720 and hydride of amyl. The entire breast was frozen “like a hard snowball;” no blood was lost during the operation, which lasted three minutes. “During the whole of the operation the patient did not utter a single expression of pain.”

Dr. Rottenstein devotes a large portion of his treatise to the method of anæsthetisation of M. Paul Bert, claiming for nitrous

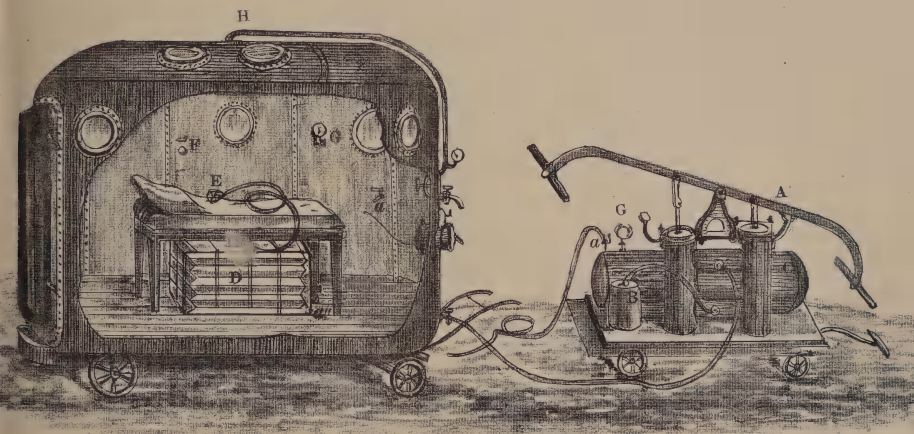


oxide under these conditions (*vide* Part I., page 162) superiority over every other anæsthetic, and these advantages—(a) absence of initial period of excitation, often so painful and dangerous; (b) complete tranquillity during the anæsthetic sleep; (c) the rapid return to sensibility, even after an operation of twenty-six minutes' duration, or more, if we desire the cessation of anæsthesia; (d) the absence of sickness and vomiting; (e) the incomparable safety of nitrous oxide, and the freedom from distraction of the operator, inasmuch as the method of administration is not variable or the amount of the anæsthetic administered inconstant; (f) no chemical combination being formed in the blood, the gas is instantly eliminated; there is no after-effect. The first operation under pressure was performed by M. Paul Bert on February 13, 1879. M. Léon Labbé operated in a chamber of compressed air (total pressure, 0·92) on a patient for inturned toe-nail with a mixture of nitrous oxide gas (85 pts.) and oxygen (15 pts.). In fifteen seconds from the first inhalation, without any of the unpleasant effects of the pure gas, insensibility and muscular relaxation were complete; speedy return to sensibility followed. M. Péan set to work to apply the method of Paul Bert in the domain of practical surgery. His first operation was removal of the breast. The operation lasted fourteen minutes, and the patient respired 150 litres of a mixture of nitrous oxide gas and hydrogen. The effect was perfect; twenty-seven minutes after the commencement of the operation the patient without assistance got off the operating-couch. Following up the experience of this operation, M. Péan had constructed a chamber (movable) for the administration of the gas under pressures varying from 15 to 22 centimetres, rarely pushed to 26; and with such an apparatus M. Péan at the Hospital of St. Louis and M. Labbé at the Lariboisière have performed a great number of operations—Dr. Fontaine, of the Rue Chateaudun, having brought his special knowledge to bear in constructing the ingenious but simple pneumatic cylinder in which the administration is conducted.—(See Plate).

We must be satisfied here with a reference to the principle of Paul Bert's method, and refer our readers to Dr. Rottenstein's treatise for a full description of the pneumatic chamber, the construction of which and the hydraulic compressor communicating with it are fully described. This figure shows the entire apparatus. In the chamber three, four, or five persons can be present during administration, but Dr. Rottenstein explains the construction of a

theatre to hold 300 spectators for use in hospitals, which Dr. Fontaine is designing, and in which (*vide* "Traité," p. 327) both the temperature of the air and the necessary pressure can, with equal facility, be maintained. Certainly if all advanced in favour of this combined method of M. Paul Bert by Dr. Rottenstein, M. Péan, and Paul Bert himself, be true, then it would appear that, difficult as it may be to carry it out, and expensive as the cost of effecting it must, in the first instance, be, it is the safest and most perfect means of anæsthetising, though, of course, impossible to achieve in some circumstances, as in operations in private houses or in military service. Mr. Clover, whose opinion on such a subject must have overwhelming weight, does not appear to think highly of the practicability of Paul Bert's method. But then it has not as yet been tried in the United Kingdom. Dr. Rottenstein discusses fully the indications for anæsthesia in operations on the eye and the genito-urinary organs, also in detecting imposture and shamming. In this Journal, in February, 1876, we considered, under the title of "Questions in Ophthalmic Surgery," that of anæsthesia, and entered into the indications and contraindications for the use of anæsthetics in eye operations. Further experience has only served to confirm the opinions then expressed. We then argued strongly against chloroform on the two grounds advanced so prominently by Drs. Delgado and Rottenstein—1st, the risk; 2nd, the vomiting, as also the avoidance of the consequent constitutional disturbance which sometimes follows its use. We quite agree, however, with the opinion advanced by Dr. Meyer when he says:—"Dans les opérations qui se pratiquent sur l'œil, l'emploi de l'anesthésie est souvent très-utile, quelquefois même indispensable." Dr. Meyer considers anæsthetics indicated often (*a*) in the examination of the eye in children, and in operations on them; (*b*) in patients who are timorous, and not willing to submit; (*c*) when absolute immobility is required, and muscular relaxation of the globe muscles to diminish intra-ocular tension; (*d*) in very painful operations (enucleation). Von Græfe included these conditions in his indications. Rottenstein, under these heads, epitomises the indications for anæsthesia in ophthalmic surgery—(1) examination of the eye, (2) entropion and ectropion, (3) extraction of foreign bodies, (4) ablation of staphyloma of the cornea, (5) strabismus, (6) iridectomy, (7) cataract. The distinguished oculist, Dr. Landolt, with qualifications, advises anæsthesia in cataract, staphyloma, strabismus, iridectomy. We have little to add to or take from the

observations—the result of twelve years of operative eye surgery—advanced by us, in 1876, in the paper before referred to. For years having used bichloride of methylene or chloroform, we have altogether abandoned these for ether, and we may say that we agree in the main with the views of Dr. Rottenstein. Of late years our use of anæsthetics has become more and more limited, and now but seldom in cataract, rarely in iridectomy, do we use them. Much depends on the character and temperament of the patient, and the state of tension of the globe. In strabismus, in many cases of entropion and ectropion, in children, in enucleation, in protracted operations, we find specially their value. But of one fact we entertain no doubt—that, *save where other anæsthetics cannot be obtained, no surgeon is justified in employing chloroform in eye operations with adults.* In dental surgery there can be but one anæsthetic—nitrous oxide gas. Dr. Rottenstein advises that if there be a partial return of sensibility after a few teeth are extracted, the patient, if it be required to extract more, should be allowed to come completely from under the influence, and be re-anæsthetised:—“He generally submits with pleasure to a second, and even a third anæsthesia.” In a child of seven years of age he placed the little patient four times under the gas for the extraction of four teeth without inconvenience. In extraction, in those cases where the nerve, not being killed by arsenic, is extracted, and in cauterisation of the gums, anæsthetics are indicated. In military surgery the difficulty of administering nitrous oxide gas and ether is great. Here the choice of anæsthetics is more limited, and chloroform is, speaking generally, the most convenient anæsthetic. “Notwithstanding the enormous advantages of ether, notwithstanding its supremacy, we do not hesitate to recommend chloroform under the exceptional circumstances with which the ambulance surgeon is surrounded.” The opinions of M. Baudens, 1847 (in the case of military conscripts), Bouisson, 1847 (*Gazette Medicale*, 34-37), Bayard (*Annales d'Hygiène et de Médecine Légale*), Martino, Sédillot, MM. Briand and Chaude (*Traité de Médecine Légale*), MM. Champouillon and Devillers, are quoted by Dr. Rottenstein in discussing the use of anæsthetics to detect imposition, the utility of anæsthetic insensibility and muscular relaxation in detecting assumed muscular contractions, paralysis, feigned madness, and imbecility, aphonia (Turnbull, “Manual of Diseases of the Ear,” p. 212; Rottenstein, “*Traité d'Anesthésie*,” p. 245), of which an interesting case is



MOVABLE APPARATUS OF DR. FONTAINE (*painted white inside*).

Two metres in breadth, 3 metres 50 centimetres in length, and 2 metres 65 centimetres high. Capable of receiving ten or twelve persons conveniently. Light is admitted through the ten small riveted panes of glass, four of which are placed directly over the operating couch. The pressure can be regulated as may be desired either from the inside or outside of the chamber.

- A, Pump which can supply 400 to 600 litres of air in the minute.
- B, Refrigerator, so placed as to prevent the temperature of the chamber rising above a degree or two over that of the surrounding air. This in winter can be replaced by a hot-water stove.
- C, an iron receiver, containing 350 litres of the mixture of anæsthetic gases compressed to 10 atmospheres.
- D, Sack placed under the couch, communicating with the receiver (C).
- E, Tube and mouth-piece.
- F, Whistle to communicate with the worker of the pump.
- a, a'', Connexions to regulate the supply of gas from the receiver to the sack, and under the control of the operator through the cock at a, on the inside of the chamber.
- G, G, Manometers to regulate pressure.
- H, Ventilating tube to permit escape of expired air.





quoted by Dr. Rottenstein of Dr. Champouillon's, in which feigned aphonia was detected in an officer who succeeded in defeating every attempt hitherto made to discover it. Patients during or recovering anæsthesia will speak loudly and sing, who previously were both deaf and dumb. In the military service we have seen some remarkable cases of feigned deafness, and it is perhaps especially in the army that this use of anæsthetics may be of value. There can be no question as to the great value of anæsthesia in examination of the urinary organs, in the use of the catheter, in lithotrity, in exploration both of urethra and bladder, in rectal exploration (Simon) and in all rectal operations, in the diagnosis of abdominal tumours, false pregnancy, affections of the joints, neuro-mimesis (Paget), fractures and dislocations, and hysterical talipes. Twice this year we detected phantom tumours where ovarian disease was supposed to exist, by the simple use of ether. Many important questions arise as to the responsibility which attaches itself to the employment of anæsthetics. Drs. Rottenstein and Turnbull enter fully into the several points of importance to medical men in regard to this responsibility:—"It is too often (Turnbull) the case that valuable lives are placed, as it were, in the hands of young men who have no proper knowledge of their use, and who do not appreciate the great responsibility under which they are labouring." We quite agree in this opinion. "Skill, judgment, discretion, experience"—all are required in the administration of anæsthetics. How far does responsibility attach itself to the administrator? Certainly, in the choice of the anæsthetic, in the previous examination of the patient, in its mode of administration, in his recognition of signs of danger, and his promptness to meet them. Proper qualification being the first test, it should only be under very exceptional circumstances that an unqualified person should administer an anæsthetic. All dentists administering them should have a recognised dental diploma. We also think (Dr. Rottenstein quotes the case of death from nitrous oxide given by Mr. Harrison, of Manchester, in which there was fatty degeneration of the heart) that either a medical man or a qualified dental assistant should be present during the administration. M. Lutaud and Dr. Rottenstein, and indeed many medical opinions in this country, are emphatic on this point.

But it is clear that while this must be the safe rule of practice, in the many exigencies of general surgery occasions will arise in which skilled assistance cannot be quickly obtained, when, with the

help of a nurse or clinical assistant, or at times without these, both in the surgeon's study and at patients' homes, anæsthetics must be given. Take cases of fracture, dislocation, strangulated hernia, for example, occurring at distances from a city, or far away from help, or as matters of urgency at any time. Here the surgeon can only fall back on such assistance as he can get at hand.

More important still is the risk run by the surgeon who, without witnesses, administers an anæsthetic to females. This is proved by the various cases that from time to time have come into courts of justice, in which criminal charges have been made against medical men. Dr. Rottenstein gives in full the discussion that occurred at the Medico-Legal Congress—M. Devillers, president. The sensibility of the erectile tissues and of the genital organs persists after it is lost in other portions of the body; and hence, as shown by Lutaud, the tendency there is to voluptuous dreams in women, in consequence of the extreme sensitiveness of the vagina during manipulations on that part. Hence, M. Lacassagne insisted on the necessity of having two physicians to administer anæsthetics. M. Comby also spoke on the criminal liability which may ensue as a consequence of these delusions on the part of young females. M. Gallard strongly urged the risk which may follow the administration of anæsthetics if only one person be present. This applies more particularly in dental operations:—"Je dirai même que la présence de cet aide indispensable, non seulement pour garantir votre morale mais aussi pour garantir votre responsabilité professionnelle."

As to the principal *post mortem* appearances found after death from anæsthesia independently of the state of the heart, already mentioned, while Caspar does not allow that there is anything pathognomonic of the form of death, M. Jourdes, from a number of observations, groups the appearances thus—(a) Pale face, dilated pupil; there are moist spots on the limbs; slight cyanosis; the tongue is injected at its base; putrefaction is rapid; the lungs are congested, at times emphysematous; also there is a redness of the trachea and bronchial tubes; the liver and the kidneys are generally congested; there is slight injection of the brain and its membranes.

As to the question of the possibility of converting natural into anæsthetic sleep, for criminal purposes, Dr. Stephen Rogers, of New York, and M. Dolbeau have specially studied this contingency. There is no doubt, as Dr. Rottenstein shows, that it is possible,

especially in children. In other forcible attempts to administer chloroform, and in cases where it is inhaled for suicidal purposes, the attendant circumstances of the case must be our guide in coming to a conclusion.

Not the least important chapter in Dr. Rottenstein's work—as it will be to the obstetrician the most instructive—is that one in which he treats of the application of anæsthesia in obstetrical practice. In our pamphlet, before referred to, we published the conclusions of Marion Sims and Campbell (Paris) on the tolerance during parturition to anæsthetics, specially pointing out this as the exception in the use of chloroform:—"Sir James Simpson, en novembre, 1847, fut l'événement scientifique qui contribua le plus au progrès de la pratique obstétricale moderne." "Toutes les objections imaginables, d'ordre moral physiologique, thérapeutique et religieux s'élevèrent contre cette innovation." Campbell and Sims were the great advocates of its use in France. Dr. Pinard opposed its employment. It was asserted that it did not assuage the pain unless pushed to a dangerous degree, that it caused the parturient to reveal secrets, and that it produced erotic effects. Reviewing the theory of Campbell, the views of Marion Sims, the teachings of Pajot, the opinion of Dumontpallier, and above all the able essay on the phenomena of natural labour in their bearings on anæsthesia, the teachings of British obstetricians—such as Barnes, Leishman, Playfair—we will briefly epitomise the views generally held on the Continent, in America, and in Great Britain on this important subject.

Professor Pajot rather threw ridicule (*Bulletin de Therapeutique*) on the administration of chloroform. Pinard from 23 observations came to a conclusion that chloroform should be banished from obstetric practice. Campbell, however, its great advocate, had published 942 cases in which it was administered beneficially. Though chloroform has never been known to cause a fatal termination in obstetric work, still, as Dr. Rottenstein points out, both Pinard and Pajot ridiculed its use, advancing the old objections—its tendency to arrest the pains and to predispose to hæmorrhage. Danyau, Bailly, Bucquoy, Legroux, Hervieux, Fereol, Dumontpallier are opposed to the two authorities quoted. Dumontpallier gave chloroform when the pain was approaching, continuing it during the pain. The pulse, respiration, or consciousness were little affected by it. The dread of the pain and all natural resistance as a consequence was prevented; incomplete contractions



ceased; he gives the chloroform on a cone of lint—a small quantity at first—and holds it to the nares during a pain (20 to 30 seconds). Administration is never pushed to general anæsthesia; there is analgesia; the patient can assist herself; labour is expedited, while pain is diminished, especially where the uterine acts are irregular and exhaustive, yet ineffectual. Legroux in his able paper argues on the purely reflex character of the act of labour, dependent upon the excitation of the sympathetic sensitive filaments, the ganglia, and cord. The consequent motor (muscular) action arouses conscious sensibility, but the uterine action can be maintained independently of the brain. The extent of this conscious control and sensibility, however, must depend on the degree to which the organ is excited; it will be aroused with intensity if the peripheral excitation be excessive (“*phénomène encéphalique, phénomène médullaire et sympathique*”). This excess of conscious sensibility causes fatigue and all the consequent disturbances both of the nervous and digestive system which react on the voluntary and involuntary muscles, abdominal, uterine, perinæal, producing an irregular and worrying labour, dangerous alike to mother and child. Our aim must be to abolish conscious sensibility, while we preserve in the fullest manner the reflex energy, disassociating “*les actes sensitifs céphaliques et les actes sensitifs médullaires.*” According to Claude Bernard the irritability of the cerebral protoplasm is arrested by chloroform, in the cells of the nervous centres, and, before all other, those ministering to the phenomena of sense and consciousness. The reflex force necessary for uterine action is increased, the contractions acquire greater force and regularity, while at the same time the suffering is alleviated—suffering which destroys the harmony which should exist between the reflex act and the necessary effort on the part of the voluntary muscles of the abdomen. Analgesia is produced. The ultimate action of the chloroform on the other tissues—on the motor cells of brain and cord is avoided; complete anæsthesia is never induced—it is a state of semi-anæsthesia:—“*Éteindre la perception à la douleur, produire l’analgésie et non l’anesthésie, régulariser ainsi une parturition dont la durée est prolongée par une irritation sensitive consciente à peu près inutile; obtenir ces résultats sans faire courir le moindre risque aux deux êtres dont la vie est entre les mains de l’homme de l’art; c’est là le but que l’on doit chercher, et qu’avec, une observation attentive et délicate on peut obtenir.*” Campbell, as is well known, explained the obstetrical tolerance for chloroform by the alternate filling and

emptying of the cerebral vessels during the uterine contractions and the intermissions. The brain is kept in a state of hyperæmia, which prevents the chloroformic anæmia. This hyperæmia of the brain normally exists in children, and hence (Paul Guersont) it may be their special tolerance also for chloroform (Gubler). This anæsthetic tolerance is proved by the complete immunity from danger, not a single death having been recorded in obstetrical practice. Given in the second stage, as the pains approach, resting in the intervals, never pushing to complete anæsthesia, chloroform can exert no deleterious action on mother or child. Of course in obstetric operations—forceps, craniotomy, version—anæsthesia must be complete.

“In eclampsia,” says Leishman (3rd Edition, 1880), “in some cases of mania, in all cases of operative midwifery, and especially in many cases of turning, they are, without exaggeration, invaluable. In ordinary cases they are always to be used with caution; but if employed in small quantities on a handkerchief on the approach of each pain, towards the termination of the second stage, they can never do harm.” Dr. Playfair (3rd Edition, 1880) dwells on the advantage of chloral in the *first* stage—chloroform not being admissible until the head is in the pelvic cavity. More especially he recommends it in rigid and undilatable cervix, and this view we can endorse from our own experience—10 to 15 grains every twenty minutes, for three doses (Playfair). But more important still in many forms of tedious labour with irregular action of the uterus is its administration by the rectum. Dr. Playfair recommends ether or a mixture of absolute alcohol (1 pt.), chloroform (2 pts.), and ether (3 pts.), should the chloroform lessen the force of the uterine pains.

#### A FEW INHALERS RECOMMENDED.

*Nitrous Oxide.*—Messrs. Johnson Brothers, 1,260, Broadway, New York. This elegant portable apparatus contains, in a small case, the reservoir of gas, the bag, and mouthpiece. It can be carried in the hand. For study purposes, also, they have devised neat tripods, supporting ornamental gas reservoirs, which communicate with the face-piece. Dr. Rottenstein figures all these various kinds of supports, mouthpieces, &c., of the Messrs. Johnson. Messrs. Barths, Coxeter, Ashe, of London, provide equally elegant and portable apparatus. The face-piece is different from the American, covering well the mouth and nose with expiratory and inspiratory valves and no mouth-tube.

*Ether.*—*Hawksley's Inhaler.* This is the inhaler which for the past few years we have principally used. The advantages are—the patient expires through an exit tube, there is no danger of asphyxia, the operator is saved the unpleasant diffusion of ether by this latter contrivance—the ether being carried by the tube to the ground; ether is economised; the respiration of the patient can be exactly supervised; the quantity of ether consumed can be always ascertained. It has the disadvantage of tediousness—it does not act near so *quickly* as other inhalers, but we can assert it is as safe as any in use. *Allis's* admirable inhaler consists of a metallic frame of bars, quarter of an inch apart. The whole is made out of a solid sheet of metal. Through the spaces thus left in the metallic frame a bandage is interlaced, dividing the cylinder into about a dozen parallel spaces. It fits into a hood, which encircles it. On the surfaces of the roller the ether is poured, and there is rapid evaporation; the bandage, if soiled, can be changed in a few seconds; the ether is added gradually. The disadvantages are—the chances of soiling the bandage by vomited matter and the free diffusion of the ether vapour. *Clover's* combined gas and ether inhaler (Mayer & Metzler), portable. The palm must be awarded to this inhaler. Mr. Clover himself (1876) thus describes its advantages:—It has no valve; the gradual supply of the ether vapour; it produces sleep in two minutes; fresh ether is not required during the continuance of an operation; the recovery is speedy; there is no necessity to warm it; no sponge or felt is required; any ether left can be saved. Mr. Clover has kindly furnished me with this description of his gas and ether inhaler:—“It consists of a vessel of two compartments. The lower one contains water, the upper is filled up to a point indicated with ether. When used the vessel is suspended from the neck by means of a strap. It is in connexion with the face-piece by two distinct passages—1st, by a non-collapsible tube of rubber, and 2ndly, by a light indiarubber bag which surrounds and conceals the tube. Attached to the other ends of this tube and bag is a double-way stop-cock, which is moved by a lever which shows its position on a dial plate. The effect of the stop-cock (which fits to the face-piece) is to make the patient breathe into the bag either directly or along the tube, and through the upper part of the ether vessel into the distal end of the bag, or partly one way and partly another, according to the position of the lever. After filling the bag with gas, or after the patient has inflated the bag with expired air, the lever is turned gradually so as to mix the ether vapour with it without exciting coughs, and when the patient has lost consciousness a little fresh air is admitted by slightly raising the face-piece. Sometimes, should any convulsive movement or extreme darkness of blood be observed, the face-piece may be raised completely every third or fourth respiration.”<sup>a</sup>

<sup>a</sup> We can personally vouch to the perfection of this inhaler of Mr. Clover's.

*Morgan's Inhaler.*—We have administered ether several hundreds of times with Morgan's inhaler. We must say that it gave us every satisfaction. It may be obtained of Messrs. Fannin & Co., Grafton-street, Dublin.

*Other Inhalers for Ether.*—Dr. B. Wills Richardson's, Skinner's, and Ormsby's. The last of these we have used many times. It has given satisfaction, but we prefer the others described. Dr. Rottenstein describes and figures a convenient and portable form of inhaler made for him by Mathieu, of Paris, consisting of a mouthpiece, a valve for exhalation, a tube for receiving the sponges, on which the ether can be poured through an aperture, while another opening communicates with a balloon into which the patient breathes. Dr. Rottenstein speaks highly of his inhaler. It is rapid in action; the period of excitation is lessened; the administration can be prolonged over any period; the patient breathes in air charged with ethereal vapour, and the exhaled air escapes.—*Vide Traité d'Anesthésie.*

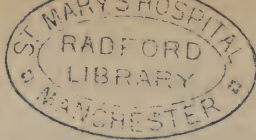
*Chloroform.*—Mr. Clover's apparatus is well known. Junker's apparatus (to be had of any instrument maker) is, to our mind, for practical purposes, the most convenient, as also the safest method of giving chloroform, chloramyl, or bichloride of methylene. (1.) The quantity is exactly regulated. (2.) The patient breathes air which is pumped through the fluid. (3.) There is no hindrance to the free circulation of air around the patient's mouth and nose. (4.) It is economical; there is no waste; and the vapour is not diffused about the operator. (5.) Its action can be prolonged over any time.

*Snow's Inhaler.*—For obstetrical operations we have been generally in the habit of using Snow's inhaler. It is convenient for use at the bedside (not more so than Junker's), and there is a free mixture of air with the chloroform.

For children we frequently use a cone of gauze (Mayer and Meltzer) lined with thin flannel, and having a small sponge in its apex. Dr. Rottenstein figures an admirable "Cornet" of Dr. Duplay's for chloroform inhalation.

For further particulars as to the comparative value of chloroform and ethidene dichloride, see the papers in the *Journal of Anatomy and Physiology* (Vol. XIV., p. 495, and Vol. XV., p. 111) by Mr. David Newman, Member of the Committee on Anæsthetics of the British Medical Association; also *British Medical Journal*, 29th May, 1880, paper by Mr. J. Clover.





## PART IV.

### MEDICAL MISCELLANY.

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*Reports, Transactions, and Scientific Intelligence.*

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#### TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

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SESSION 1880-81.

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GEORGE JOHNSTON, M.D., President.

ALEXANDER NIXON MONTGOMERY, M.K.Q.C.P., Honorary Secretary.

*Wednesday, March 2, 1881.*

The Vice-President, DR. WALTER G. SMITH, in the Chair.

*A case of Enteric Fever, with Complications.* By CECIL J. L. BUSHE, M.B.,  
Univ. Dubl.; Surgeon Army Medical Department.

THE case I have the honour to bring under your notice this evening is one of no small interest, opening up as it does the question as to whether what we call "malaria" is in any degree transmissible between individuals, and whether a subject previously healthy, and who has never been exposed to the influences, climatic and otherwise, from which the malarious contamination commonly arises, can be so influenced by the presence and contact of other individuals who have been so exposed as to produce a visible effect on his health.

It is a well-known fact, and one of which I have myself had ample experience, that in malarious districts a peculiar and most characteristic odour may be distinguished at certain times, generally after sunset and during the night, and also very generally associated with a misty fog.

This odour is peculiar to malarial districts; and although, in our present state of uncertainty with regard to the exact definition of what we call malaria, I would be unwilling to state that the smell is that of malaria, yet all who have had long experience in the treatment of these diseases are aware that a similar odour may be distinguished from the person and in the excreta of such patients, more especially in the sweat, and occasionally in the fæces.

With regard to the latter excretion, gentlemen, I may state, that I am

myself liable to occasional attacks of malarial fever, which I contracted in Burmah in 1873; and that although I have a regular cold, succeeded by a hot fit, yet I never sweat, the poison in my case being eliminated by the bowels apparently, as I always recover after passing one or two copious evacuations possessing a strongly malarious odour. It is not more than five or six weeks ago since I had such an attack, following a slight chill.

The case I now lay before you is one of enteric fever, presenting certain symptoms of a typho-malarial character, in addition to its ordinary symptoms. The case is as follows:—

Lance-Corporal Bourne, of the 80th regiment, aged twenty-three years, two years' service, a native of Staffordshire, who states he always enjoyed good health, and who has never been abroad in his life, and since enlistment only served at the dépôt of his regiment and at the Curragh Camp, previous to coming to Dublin, was admitted into hospital from the Royal Barracks on the 20th December, 1880, complaining of continual rigors, vertigo, and sickness of stomach. His face was dusky and flushed, eyes suffused, skin dry and hot, great nervous irritability, and subsultus tendinum. Temperature,  $104.8^{\circ}\text{F.}$ ; pulse, 110. Marked bronchophony over posterior aspect of right lung; tongue dry and glazed; complained much of thirst; severe frontal headache; also pain in occipital and lumbar regions. He vomited several times before admission, and frequently for the next two or three days. The bowels were very loose, and the stools were watery and of a yellow ochrey appearance.

Evening visit.—Temperature,  $105^{\circ}\text{F.}$

The case went on, with very high temperature, with continued rigors and gradual consolidation of right lung and posterior and inferior portion of left, up to the night of the 23rd December; the tongue during this time presenting the pathognomonic appearance of enteric fever, being red and beefy at the sides, pointed, very foul in the centre; the bowels loose; fæces fluid and of a yellow ochrey appearance. Delirium at night; great subsultus tendinum, insomnia, muttering to himself, and all the appearance of intense poisoning of the nervous centres. On that day both lungs being much engorged, his chest was enveloped in a succession of jacket poultices, and he was treated with half-drachm doses of spts. terebinthinæ, suspended in white of egg, every fourth hour. His evening temperature, on that date, was  $102.3^{\circ}\text{F.}$  He was delirious all night, and attempting to get out of bed; towards morning he passed a great quantity of urine (amount not measured) densely loaded with lithates.

On the morning of the 24th there was complete defervescence of the fever; temperature normal; pulse, 84; skin acting freely; respiration restored in front and posteriorly down to the superior margin of seventh rib. He had taken altogether about four drachms of turpentine. The temperature from this date gradually crept up with the regular rise and

fall of enteric fever, till the period of convalescence set in—the symptoms being those of an ordinary case of enteric fever; but the strangest feature in the case is, that during the period of convalescence the patient has been liable to frequent remissions, with the regular rigors, succeeded by the hot stage and sweating of true malarial fever, for which I found it necessary to treat him with quinine.

Now it will doubtless strike many here that the early high temperature was the result of the pneumonia with which the disease was complicated, and that the rapid resolution was followed by a corresponding fall of temperature. In reply to such a natural remark, I must refer you to what Professor Aitken says, in page 608, Vol. I., of his 7th Edition—namely, “A case after the first day whose temperature has been normal *once* in the first week, is not a case of enteric fever.” Yet here the temperature fell to normal on the fourth day; and, during my experience of typho-malarial fevers in South Africa, I have frequently seen temperatures fall from 105° F., and higher, to below normal in a few hours without the administration of quinine.

By a curious coincidence I am now able to lay before you the temperature chart of another soldier, at present suffering from enteric fever at the Royal Infirmary, who did serve previously in South Africa, and who has a malarious taint, in which you will remark precisely the same early rise and fall of temperature without having had the pulmonary complication.

I must also beg you to allow me to quote from a paper on “Maltese Fever,” in the *Army Medical Report* for 1866, by Dr. Boileau, now one of the Assistant Professors at Netley:—

*Extract from Dr. Boileau's Paper.*—“Generally 24 hours ill; generally quite well ‘yesterday morning;’ frontal headache, vertigo, rigors, vomiting, general pains, eyes suffused, occasionally purging, sometimes pulmonary complication. On 3rd day, often aggravation of symptoms and frequently highest temperature reached. On 4th day, generally amendment. On evening of admission, temperature generally over 102°, sometimes up to 105°. On 3rd day, morning temperature falls generally one degree. On 2nd and 3rd evenings, highest temperature rarely under 103° F.” In the case under my own observation, the man’s regiment had only just returned from the Cape, after ten years’ service in Hong-Kong, Straits Settlements, Natal, &c., and it would almost seem as though the malarious poison, which appears in a certain degree to be reproduced in the system of those tainted on each febrile remission, had been passed on to him, by contact or otherwise, from his comrades, the greater number of whom are old soldiers of long tropical service. I believe my friend, Surgeon-Major Jackson, who has made a special study of fevers of a typho-malarial character, has had experience of cases in which a somewhat similar history existed.

# PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

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## FORTY-THIRD ANNUAL SESSION.

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JOHN A. BYRNE, M.B., President.  
WILLIAM ROE, M.D., Honorary Secretary.

*Saturday, February 5, 1881.*

DR. DENHAM in the Chair.

### *Auscultatory Signs in Uterine Tumours.* By DR. NEVILLE.

I DESIRE in this paper to draw attention to an auscultatory sign often met with in the case of uterine tumours, and to elicit from those members of the Society who have had a much longer experience than mine an opinion as to its value in differential diagnosis. To Dr. Kidd I am particularly indebted for permission to give the following clinical record of a case admitted under his care into the Coombe Hospital in August last, in which this sign was typically present:—

E. H., aged fifty, unmarried, and by occupation a cook, gave on admission the following history:—For the last eight years she had suffered from occasional attacks of pain and swelling in the left leg, especially during menstrual periods. This pain and swelling had on several occasions interfered with the performance of her duties, and obliged her to give up situations. She was treated three times for these symptoms in the Liverpool Infirmary, and when first there, eight years ago, was told by a nurse that she had an abdominal tumour. Previous to this time she had not been aware of its existence, as it had neither caused her any uneasiness nor given rise to abdominal enlargement. Two years since she had been in Baggot-street Hospital, where she had also been told of the tumour, the existence of which she had then almost forgotten, as it still caused no pain or discomfort. Her only trouble seems to have been the state of her leg, and she had always left hospital so soon as rest and treatment had relieved it. She is an unobservant, lethargic kind of woman, but she thinks that the tumour has lately increased in size. Even now it causes no marked discomfort, excepting an occasional heavy and burning sensation which precedes and accompanies for the first few days each menstrual period.

Menstruation up to the age of thirty was regular, usually lasting a week, and accompanied only by slight lumbar aching. Between the



ages of thirty and forty she used to suffer from rather severe pain in the hypogastrium and left iliac fossa, preceding the appearance of the flow by about three days. At the same time the menses became more profuse, though never sufficiently so to cause any alarm. At this time also they began to be succeeded by some slight leucorrhœa. Since the age of forty the dysmenorrhœal symptoms have gradually abated. A little more than a year ago the catamenia ceased altogether for three periods, after which they returned profusely, lasting for ten or twelve days. Since then they have been irregular, at times missing a period, but always lasting longer and more profusely than formerly. During each menstrual period she complains of a feeling of weight and fulness, but of no pain except that in the loins which is slight. Micturition is normal, except just before and during the commencement of each menstrual period, when it is frequent, difficult, and attended by slight pain. Defecation has been regular and painless. Her general health has recently been failing, and she complains of general weakness and frequent transitory flushings. Her appetite is good, and she sleeps well. She looks rather washed out and anæmic.

On examination, an almost centrally placed tumour was found, partly filling the abdomen, and reaching from immediately above the symphysis pubis to nearly half way between the umbilicus and ensiform cartilage. The tumour is projecting and semi-globose, smooth everywhere on its surface, easily movable from side to side, semi-fluctuating or doughy on palpation, and dull on percussion over its entire surface. Percussion of the abdomen in the flanks and above the tumour everywhere yields a resonant note. The skin over the tumour is natural, and there is no enlargement of the superficial abdominal veins. The umbilicus is slightly flattened. On auscultation a loud, prolonged systolic blowing murmur, very much resembling the uterine bruit of pregnancy, is heard over the left lateral and upper portions of the tumour, spreading inwards to the middle line and downwards into the left iliac fossa. No murmur can be heard in the epigastric region above the tumour. There is no cardiac murmur and no venous hum in the jugulars. The measurements of the tumour were:—

From umbilicus to ensiform cartilage	-	-	7 $\frac{1}{2}$ inches.
„ to symphysis pubis	-	-	7 $\frac{1}{2}$ „
„ to right anterior superior spine	-	-	8 „
„ to left anterior superior spine	-	-	8 $\frac{1}{2}$ „
Circumference of abdomen at level of umbilicus	-	-	33 $\frac{1}{2}$ „

On vaginal examination no pelvic tumour could be felt. The cervix was healthy and movable. The uterine sound on the first occasion of the examination was passed in the normal direction to the normal length into the cavity of the uterus, and the tumour could then be moved from

side to side without imparting consenting movements to the handle of the sound. The condition of the leg was found to depend on some amount of varicosity and subsequent phlebitis of the long saphenous vein, conjoined with chronic eczema over the front of the left leg. There was also some slight œdema around the left ankle.

Thus far a diagnosis of the nature of the tumour would lie between that of an ovarian or a uterine, fibrous or fibrocystic tumour. Between these alternatives the elements of a certain diagnosis seemed conflicting. On the one hand the age of the patient, the gradual growth of the tumour, the want of distinct fluctuation in any place over its surface, and, to a certain extent, the menstrual history, collectively considered, were in favour of its being uterine. On the other hand, the free mobility of the tumour, its smooth and nowhere hard surface, its general symmetry, and the way in which the tumour could be manipulated without affecting the sound *in utero*, went quite as strongly in favour of its being considered ovarian. One point, however, which told strongly against this latter hypothesis, and one on which Dr. Kidd laid great stress, was the existence of the vascular murmur which he had frequently met with in the case of solid uterine tumours, but never in the case of tumours proved by actual dissection or operation to have been ovarian.

Balancing the probabilities a decided diagnosis was postponed until a second or third careful examination had been made. The patient remained directly under observation, and was put on a course of iron with a view to improve the general condition of her health. She menstruated at her proper time a few days after this examination, the characters of the discharge being as previously described.

The next detailed examination settled the question of diagnosis. The sound having been introduced through the internal os with some difficulty, it was passed at first to the left side and slightly backwards, then forwards, and finally to the right side. It entered the twisted and lengthened cavity of the uterus in this corkscrew manner to the depth of six inches. Any movements then given to the tumour were faithfully conveyed to the handle of the sound. The tumour was thus proved to be a uterine one, and the stress originally laid upon the diagnostic importance of the vascular souffle was in this case justified.

This patient remained in hospital for a considerable time, leaving in November, considerably improved in her general health by a prolonged course of iron, and quite relieved as to the condition of her left leg. The menstrual discharge appeared at regular monthly intervals, and though extending over seven or eight days, it was never so profuse or painful as to suggest any special interference. On no occasion was there any discharge of blood between the periods. During her stay in hospital numerous observations were made on the varying auscultatory signs which the tumour presented. On the result of these I propose

offering some notes, premising them by a short history of what appears, so far as my reading goes, to have been previously known and written about vascular souffles occurring in uterine or ovarian tumours.

Attention seems first to have been directed to this murmur in cases where, simulating the "placental souffle" (so-called), it might have been at one time supposed to be certainly indicative of pregnancy. Thus J. A. Depaul, in a "Treatise on Obstetric Auscultation" (Paris, 1847), relates several such cases. Professor Walter, in an essay on "Fibrous Tumours" (Dorpat, 1852), also noted the murmur. I mention these works not because I have myself seen them, but as showing how far back we can refer for some knowledge on this point.

Murphy and Tyler Smith, in their manuals on "Midwifery," while discussing the value of the uterine souffle as a sign of pregnancy, have both noted the occasional existence of like sounds in the case of fibrous tumours. The former authority wrote as follows about this murmur:—"It is not exactly the same [as the placental souffle], but much louder, and it is limited either to a very circumscribed space, showing its seat to be in some single compressed artery, or is heard generally over the uterus when its vessels are compressed irregularly by the new growth. The practised ear will at once distinguish between these sounds."

Subsequent authors of standard works on midwifery in this country have mostly mentioned this murmur as detracting from any diagnostic value which it was formerly thought to possess in the recognition of pregnancy. It has been mentioned thus in the works of Ramsbotham, Churchill, Leishman, and Playfair. They are all agreed that the sound itself is indistinguishable from the souffle of a pregnant uterus, differing in this view from that of Murphy. Playfair says—"It is of little or no use in the diagnosis of the nature of an abdominal enlargement"—one of the most sweeping statements of its general worthlessness, but one which I do not think is supported sufficiently by facts.

Sir J. Y. Simpson noticed this murmur very fully in a lecture on "Fibroid Tumours of the Uterus," published in 1862. He thought that it was very commonly found in fibroid tumours, more especially in those of the interstitial variety, where careful auscultation would almost always discover it. He noticed also its temporary disappearance in some cases. Of its value in differential diagnosis the following is his estimate:—"Its negative are no less valuable than its positive results, for if the presence of a bruit serve to distinguish fibroid tumours from ovarian dropsies, the absence of the sound of the foetal heart may be our chief guide in helping us to distinguish it from the gravid uterus."

The description of this murmur given by Dr. McClintock is the one which has since then been most frequently referred to, and I therefore quote it more at length:—"A *bruit de soufflet* in some part of the uterus, and always synchronous with the pulse. . . . Sometimes it is short

and abrupt, a mere whiff accompanying each arterial pulsation. At other times it is prolonged and musical, and not to be distinguished by the most acute and practised ear from the *bruit placentaire*. Not only may it simulate this in the character of its sound, but also in its rhythm—occasionally being loud and intense for some pulsations, and then becoming feeble and inaudible. I have observed too that it may present another character that belongs to the placental murmur—viz., it can be diminished or suppressed by moderate pressure of the stethoscope over the spot where the sound was heard, leading us to suppose that it was produced somewhere near the surface of the tumour. . . . All the cases where I have met with it were, to the best of my belief, examples of interstitial or submucous, non-pediculated fibroids. Although a very interesting phenomenon, it is not of any special diagnostic value, being common to pregnancy and ovarian disease, which are the two conditions most likely to be mistaken for fibrous tumours of the uterus.”

Routh (Lettsomian Lectures, 1863) gives a full consideration to this auscultatory sign. He quotes Dr. M'Clintock's description at length, but differs from him in thinking that it embraces two distinct murmurs, owning separate causes—one a *tubular* souffle, due to pressure on the aorta, the other a vesicular souffle, resembling exactly the *bruit placentaire*. “The true tubular souffles are, so far as I know, very rarely, if ever, heard in pregnancy or ovarian tumours; the *bruit placentaire*, or one very like it, may be—perhaps often is.” The former may be accompanied by a thrill “never met with either in ovarian disease or in pregnancy.” The occurrence also of a musical note Dr. Routh would consider as conclusively in favour of a solid uterine tumour.

R. Barnes also quotes Dr. M'Clintock's description, to which he has added nothing. Sometimes, he states, a blowing murmur can be detected in either groin in the case of an ovarian tumour, though vascular murmurs of some variety are far more frequently met with in uterine tumours. West thinks that these souffles are rarer than is alleged by other authorities, and has never met with them in ovarian tumours. Spencer Wells, in his work on “Diseases of the Ovaries,” mentions such a bruit as “being very rarely perceptible in ovarian tumours,” and evidently thinks its existence strongly presumptive that the tumour is a uterine one. Among recent American authorities, neither Thomas nor Emmett mentions the murmur in their works on “Diseases of Women.” Goodell has often heard it in cases of fibroid but never of ovarian tumours. He bears out the observations of M'Clintock and Simpson in thinking that it is chiefly met with in the interstitial form of fibroids, its loudness being dependent on the thickness of the uterine tissue outside the tumour.

Schroeder (“Ziemssen's Cyclopædia,” Vol. X.) mentions the bruit as of no great significance from a diagnostic point of view, being common in fibroids and very rarely met with in ovarian tumours. C. Braun, of



Vienna, in a quite recently published work on midwifery, expresses the same general opinion, as does also Guttman in the "Handbook of Physical Diagnosis" translated for the New Sydenham Society. These opinions are those of recent representative German authorities.

So far, therefore, our knowledge of this souffle and of its importance as regards diagnosis may be stated to be as follows:—A sound very closely resembling or indistinguishable from that of the uterine souffle of pregnancy may be often heard on auscultation over a uterine fibroid. It is most often met with in cases of interstitial fibroids. It is systolic in rhythm, and varies in tone, loudness, and site even in the one patient. Pressure modifies and may obliterate it. According to some authorities a like souffle may be met with occasionally in cases of ovarian tumour, while others regard its existence as almost, if not quite, distinctively diagnostic of a uterine tumour.

The tumour in the case of the patient whose history I have related presented what I consider to have been two distinct murmurs, which I shall describe separately, though they were both frequently present at the same time in different parts of the tumour.

The first of these was a souffle, which presented the general characters I have just described—a prolonged, loud, systolic souffle, almost continuous, and so resembling the venous hum met with in cases of chlorosis, capable of being shortened and intensified by slight, and obliterated by more decided, pressure of the stethoscope; never abrupt or whistling, and unaffected in position or character by movements of the patient or tumour. It was heard most loudly in the left iliac fossa, and sometimes over the entire left side of the tumour. A few times it was heard in the right iliac fossa, but so faintly as to make us think it merely a conducted sound. It presented one peculiarity not, so far as I know, previously noticed. It was absent during the greater part of an intermenstrual period, preceding by about three days the appearance of the menstrual flow, and fading away as this began to cease. It came on at the same time that the patient began to suffer sensations of abdominal weight and discomfort, which forestalled the appearance of each menstrual flow, and it was heard most loudly and over the widest area during the first few days of the flow itself. These facts as regards the souffle in this particular case rest on observations made during three menstrual and intermenstrual periods. In other cases of uterine tumours where I have heard similar murmurs, the patients were not so continuously under my observation as to enable me to make any statement as to whether they were in any way modified by the advent of a menstrual period. Such modification, however, might, I think, be, *à priori*, expected from a consideration of their probable causation—a question too extensive for me now to do more than just allude to.

The second murmur was an abrupt, sharply defined whiff, accompanied

by a systolic impulse, musical or capable of being made so by but slight pressure—a kind of muffled whistle, heard over a small area at the central apical portion of the tumour. This sound exhibited a remarkable come-and-go character. One moment it was loud and clear, another gone—not fading away, but vanishing. Having been heard at first along with the other souffle, it was naturally regarded as an outlying specialisation of it; then heard by itself, and its peculiar characteristics being separately studied, some simple experiments satisfied me as to its cause. The tumour has been described as having been freely movable from side to side, and when taken between the hands could be made to cross over and on to—seemingly with a jump—the vertebral column. In repose, if I may so term it, the patient lying on her back, the tumour usually lay so as to cause no murmur. When pushed or lifted towards the right side, even to a very slight extent, the murmur was readily developed as described. I think, therefore, that it must have been due to pressure on the aorta, caused perhaps by some protrusion of the left superior and posterior part of the tumour. The murmur could sometimes, but not always, be developed by making the patient lie on her right side. The movements which served to make it come and go were so slight as not often to be perceptible externally. This explanation allows us to understand its strikingly intermittent character. The murmur was never heard in the epigastric region immediately above the tumour—no doubt because such a sound would naturally be conducted much more distinctly through a solid tumour than through the generally somewhat flatulent stomach or intestines. Its extreme localisation over the tumour alone surprises me.

Regarding the diagnostic importance of these murmurs I shall now add but little, not having had sufficient experience myself on which to found stable opinions in the face of so much that is conflicting in that of others. The balance of opinion seems, certainly, in favour of giving to the first described some weight. If in any case such a souffle existed, profoundly affected, as it was in the case which I have narrated, by the appearance of menstrual molimina, then, for reasons which are obvious, I should be inclined to consider it almost decisive as to the tumour being a uterine rather than an ovarian one. In any case the aortic murmur, I should think, can only be due to the pressure of some solid, and therefore generally uterine tumour. Other causes for an aortic murmur would, of course, have to be excluded before any weight could attach to its presence.

Auscultation of the same tumour constantly revealed noises other than the murmurs—those, viz., of borborygmi loudly conducted to every point on its surface. Would such sounds be nearly so distinctly conducted in cases of large ovarian, single or multilocular, cysts? I do not remember having seen this point alluded to, and yet my own experience would

lead me to think that it may have some diagnostic value. In those ovarian tumours which I have had opportunities of seeing these gurgling noises were never so loudly heard as they were in this and other cases of undoubted fibroids.

DR. ATTHILL.—The question of the presence of bruit in fibroids, and the absence of it in ovarian tumours has attracted my attention for a considerable time. I never had an ovarian case that I did not auscultate; and neither in cases under my own care nor in those which I saw in consultation did I ever hear a good soufflet where the case had been satisfactorily ascertained to be ovarian. I am prepared to admit that in certain cases of ovarian tumour something like a murmur may be heard. The question is—Is the murmur in the tumour, or due to pressure upon some vessel outside the tumour? My own impression is that the latter is generally the case. Fibroid and ovarian tumours occasionally co-exist, and what occurs in such cases may have led to error, for the murmur heard may have been attributed to the ovarian rather than to the fibroid. This occurred in a case under my own care where Dr. Kidd and I had some doubt at first as to the nature of the tumour, and I concluded that we were dealing with two tumours, a fibroid and an ovarian. There was a murmur no doubt, but it was uterine. The woman died in hospital. As to the authorities mentioned by Dr. Neville, who said one after another that the existence of such a murmur was of no practical importance, I am afraid that those gentlemen followed one another like sheep, and wrote down opinions without having verified them by experience. I never had a case in which I was able to distinguish the increase of a murmur during the menstrual period. The point recorded by Dr. Neville as to the passage of the sound is important. He has alluded to a case in which the sound first failed to penetrate to a greater depth than two or three inches, and subsequently passed to a very considerable depth. Every one of us have had experience of that from time to time, and I am perfectly satisfied that it would be an advantage in some cases to use a catheter or a bougie. Yesterday, in a case of doubtful tumour in the Rotunda, I got the sound in two and a half inches, but I believe the case to be one of enlarged uterus, and that the sound ought to penetrate more deeply. The degree of penetration may be due to alteration in the position of the tumour, or possibly to more skill being used at one time than at another.

DR. KIDD.—This subject has occupied my attention for a great many years. In my first ovariectomy, now twenty years ago, my attention was first directed to it. In that case a great many men examined the patient, and, I believe, all were agreed that the tumour was ovarian. When we cut down on it we found that it was uterine. In that case this sound was very plainly heard. Since then I have always examined abdominal

tumours with the stethoscope. The result of my experience is that the sound is generally heard either at the iliac fossa, and probably over the point where the broad ligament attaches to the uterus, or at the large vessels under the uterus. In Dr. Neville's case we first heard it on the upper portion of the tumour on the left side, and I believed it was a transmitted sound from the aorta. On the second examination we heard the peculiar bruit of uterine tumours in the usual site—namely, over the attachment of the broad ligament. I think we may say that this sound is never heard in hard but always in soft tumours that present a deceptive character of fluctuation, and in that respect closely resemble ovarian tumours. We hear it in cases where the hæmorrhage had been both excessive and slight. If we heard it only in cases of excessive hæmorrhage we might be inclined to compare it to the anæmic murmur, but I have heard it as frequently in cases where there has been no excessive loss of blood. I never heard it in a case of a tumour proved to be ovarian; and, as far as my recollection goes, there is no case on record of this sound having been heard where the tumour was known to be ovarian. In various books we have rather loose statements as to its occurring in ovarian disease, but in no instance that I know has it been distinctly proved to have occurred in ovarian disease. Every day's experience leads me to attach more importance to it as a diagnostic sign, and when I hear a sound of the kind I require very strong evidence to lead me to believe that the case is ovarian. I have heard it in tumours as large as that which Dr. Neville has described, and also in tumours not larger than an orange, so that the size of the tumour is not essential though I have heard it much more frequently in large than in small tumours. I have at present a case under my observation in which there is a combination of tumours—one being a small uterine tumour, rising a small way above the pubes, and the other a large abdominal tumour, which I believe to be ovarian; and in the small tumour the sound is very marked, while in the large one no sound can be heard.

DR. HENRY KENNEDY.—Having regard to the locality of the soufflet, the question is—does it not frequently arise from the iliac artery? As regards its force at different times, I have seen enough to convince me that the nature of the tumour alters the soufflet. In tumours of the thorax there is a soufflet, the strength of which varies in a most extraordinary manner, and is sometimes lost. The only way in which we can account for these varieties of sound is by the varying textures of the tumours. In the case of a malignant tumour becoming turgid by increased flow of blood, the sound from it will be materially changed. I think there is no great difficulty in accounting for the fact that a soufflet can at times be scarcely heard and at other times is decidedly plain. It is quite possible that the pressure of a tumour on the iliac artery may produce a sound. Indeed I need not say that the mere way in which a



stethoscope is applied over the aorta or stomach sometimes produces a sound. There is no healthy person in whom you cannot produce it by the slightest pressure of the stethoscope.

DR. NEVILLE (in reply).—I believe it is the opinion of the Society that the existence of a murmur always proves that the tumour is fibroid rather than ovarian. In the interstitial forms of fibroid, when it is embedded in the walls of the uterus, it has been frequently found that the uterus is practically almost a pregnant uterus, and there is a large plexus of vessels round the tumour, and we can imagine that a murmur would be heard in those vessels like a placental bruit during pregnancy. In the case of an ovarian tumour it is hard to imagine from what vessels a murmur would proceed, especially where there is only a large single cyst.

The Society then adjourned.

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5th March, 1881.

DR. BYRNE, President, in the Chair.

*Specimen of Complete Uterine Cast.* Exhibited by DR. ROE (the Hon. Sec.) for DR. RINGROSE ATKINS, of Waterford.

THE particulars of the case with which this specimen is connected are shortly as follows:—Catherine Hogan, aged about thirty-three years, was admitted to the Union Hospital, Waterford, to Dr. W. R. Connolly's wards, under my care while temporarily acting for him. The patient was a married woman, the mother of one child (aged eighteen months), and she had been in the enjoyment of good health to within a few days of her admission, when she was seized with severe dysenteric diarrhoea—then epidemic in Waterford—for which she sought hospital treatment. When questioned subsequently, she stated that she was not certain whether she had been pregnant, as some little time previously she had “seen a slight change.” She had not suffered from dysmenorrhœa, and complained of nothing which would point to the existence of uterine disturbance. Two days after her admission, and while still affected with diarrhoea, she was seized with severe uterine pains and some hæmorrhage, but not to any alarming extent. These pains had not been on her long when the accompanying cast of the uterus was expelled, and then the uterine disturbance at once subsided, and on my visit the next morning, when my attention was called to what had come away, she appeared quite comfortable, and free from any pain or tenderness. In a few days afterwards the diarrhoea was checked, and she left the hospital quite well in every respect. I may add that no subsequent examination of the uterine cavity was made. The accompanying specimen, which was thus expelled, was a perfectly closed sac, resembling the uterus in external



outline; its outer surface was very rough and shaggy, and, though soft to the touch, it was not very friable, and could be readily handled without injuring it. When first examined it was quite distended with what proved to be nothing more than a clear reddish-brown looking fluid of a watery consistence; there was nothing solid whatever within it, and when the fluid escaped through the incision made in its long axis, the sac was seen to be lined throughout with a delicately-fine transparent membrane, which seemed to be adherent to, or to form part of, the thick shaggy wall. The specimen has been preserved in a solution of chloral hydrate and rectified spirit, and it has shrunk somewhat, and become tougher and denser than it was in the recent state.

I shall not venture to add any remarks on the probable nature or origin of the specimen, leaving it to the members of the Society to determine these points, from their own examination of it, in connexion with the above brief particulars, which are all that I can glean.

The PRESIDENT.—This has very much the appearance of an ovum which was expelled after having remained some time in utero.

DR. MACAN.—I consider great thanks are due to Dr. Atkins for having sent this specimen. I wish to say that I think you, sir, have accurately described the case. The history given is almost typical of a case that occurred in the Rotunda Hospital when I was Assistant-Physician.

#### *Funis Repositor.*

DR. KIDD said he had been asked by Dr. Leeper, of Loughgall, to exhibit an instrument he had devised for returning the funis into the uterus in cases of prolapse, and said he had great pleasure in laying this instrument before the members. It will be observed, he said, that it is a very soft and flexible rod of gum-elastic, with a notch or fork at one end. Into this notch the funis is placed, and then the instrument is pushed up into the uterus, carrying, of course, the cord with it, and there it is allowed to remain till expelled along with the child as the labour is completed. The advantage of the instrument is the facility with which the cord can be attached to its forked end, and so carried up into the uterus, and retained there free from pressure. Dr. Leeper states in his letter that he is getting the instrument made with the fork a little wider, so that even a thick cord would be easily received into it, and also made somewhat smaller in diameter and flatter, so that there would be less danger of its injuring the neck of the uterus during the passage of the head. Dr. Kidd observed that the instrument would probably remind the members of one exhibited by Dr. Robertson at the Exhibition held by the London Obstetrical Society in 1866, but which very probably Dr. Leeper had never seen. It had always appeared to him that this

instrument of Dr. Robertson's was the best that had ever been suggested, but he thought that perhaps Dr. Leeper's had the advantage over it in the ease with which the cord could be attached to it, and the greater safety with which the instrument could be carried into the uterus, owing to its flexibility and softness; but Dr. Robertson's certainly appeared less likely to injure the uterine structures during the passage of the head. This latter is described in the catalogue as consisting of 12 inches of half-inch india-rubber tubing closed at one end. A stiffener (stilette or uterine sound) is passed up within it to the top. When used a tape is loosely fastened round the funis, and then the tape is tied round the end of the tube. After the funis is replaced the stilette is withdrawn, the rest remaining behind to be expelled with the child.

One disadvantage, it appeared to him, applies to both instruments in common with many other ingenious instruments intended for special cases—that they are not always at hand when wanted; but it seemed to him that a very valuable hint may be taken from them. A gum elastic catheter, softened in warm water, and the bone top removed from it, would answer the purpose of Dr. Leeper's gum-elastic rod. The funis could be attached to this by the loop of tape, and, if necessary, a stilette could be passed into it. The cord could then be carried back into the uterus and the stilette withdrawn, leaving the catheter within to be expelled with or after the child. Hitherto he had always, he said, adopted the postural treatment for prolapse of the funis, and he thought he would still try it in preference to any instrument.

DR. ATTHILL.—I also received one from Dr. Leeper, which, at his request, I sent back to London to have it modified. In acknowledging the receipt of it I expressed opinions very nearly identical with those of Dr. Kidd. My main objection to the instrument is its thickness, the diameter being very nearly half an inch, and in an ordinary-sized pelvis it would seriously retard birth. I am afraid, too, that no gum-elastic material could be made thin enough.

*On Intra-uterine Polypi, and their Removal.* By Dr. J. A. BYRNE,  
President.

THE PRESIDENT (DR. JOHN A. BYRNE) brought under the notice of the Society two cases of intra-uterine polypi, which he had lately removed from patients in St. Vincent's Hospital.

The first case was that of M. L., a married woman, aged thirty. On her admission into hospital she was very anæmic and weak, and gave the subjoined history:—

She was married at the age of twenty-five. During her girlhood she had always enjoyed good health, and was engaged as a servant in the country. She menstruated regularly, but not over abundantly. In two years after marriage, which had not been followed by pregnancy, she

began to feel pain during the menstrual period, and the flow was more abundant than natural. Those symptoms were soon succeeded by bearing down pains, and the discharge occasionally of a muco-sanguineous fluid. She consulted a medical gentleman in the country, who sent her to St. Vincent's Hospital, to be placed under my care.

On examination I felt the uterus enlarged and antverted, and the upper and left side of the pelvis occupied by a solid mass. There were no signs of dilatation of the os uteri.

On introducing the sound it was opposed by a solid resistance, caused by the tumour, but it revealed the existence of it and its attachment to the left and posterior part of the cavity near the fundus.

Having made the necessary preparations, on the following morning I introduced four seatangle tents. They caused some pain, but an anodyne relieved this. In twenty-four hours the tents were removed, and four short and four long tents introduced. On removing them the os uteri was sufficiently enlarged to introduce the finger, and I felt the tumour growing from the fundus near the left side. Having grasped it with a strong vulsellum, I passed an iron wire around the pedicle and removed it with the *écraseur*. I touched the pedicle with strong nitric acid, and her convalescence was rapid. She left the hospital and returned to the country, where she has since given birth to a child, and she has had no return of any symptoms leading to the supposition that the disease has returned.

The tumour exhibited was 2 ozs. in weight, of the fibrous kind, and was slightly lobulated on its surface.

The second case occurred in January, 1880. She was sent to me by Dr. Hornidge, of Tyrrelspass, County Westmeath.

This patient gave the following account of herself:—She had been leading an active country life; was always strong and in good health till married; menstruated regularly; was thirty-five years of age; was married five years. Soon after marriage she began to suffer from pain, gradually increasing menorrhagia, and muco-sanguineous discharge. She had never been pregnant—a matter which troubled her a good deal. She at length became so reduced in strength, and so anæmic from the repeated and copious hæmorrhage, that she consulted Dr. Hornidge, who recommended her to come to St. Vincent's Hospital.

On admission she appeared much blanched; her lips were pale; a well-marked anæmic murmur extended over the sternal region, and she was very weak. She stated, however, that since she had been under Dr. Hornidge's care—in fact, for more than three months—she had had no hæmorrhage whatever. On examination I felt the os uteri somewhat dilated, about the size of a fourpenny-piece, and, making its way downwards, a solid mass, which my finger at once recognised to be a polypus. The sound passed freely around it, and revealed its attachment to the



junction of the fundus and left lateral wall of the uterus. In a few days afterwards I introduced six seatangle tents, which were left in for twenty-four hours. I thought that I would be able to remove it at this séance, but the os was not sufficiently dilated, so that I was compelled to introduce a fresh relay of nine tents, which were left in for twenty-four hours. On their removal there was ample room for the grasping of the tumour by the vulsellum, and the application of the wire and removal by écraseur. The interior of the uterus was explored, and it was ascertained that there was no other tumour. Nitric acid was applied, and the uterus washed out; an anodyne given; no bad symptoms supervened. She left the hospital quite well, and in March Dr. Hornidge wrote to me that she was rapidly gaining strength. I have not ascertained an important fact—*i.e.*, whether she has become pregnant or not since removal of tumour.

DR. BYRNE said, that besides the detailing of the cases, he had not much to add. Those two cases, in addition to others which had been brought before the Society by some of its members, proved the inestimable value of the seatangle in dilating the cervix, and thus enabling us to explore the interior of the uterus, and, if necessary, to remove any tumours having their attachment therein.

There was one circumstance, however, in the second case which merited some attention; this was, that for several months there was no bleeding from the uterus, although the tumour was there. This hæmorrhage had been constant for a long time, and had weakened her very much. When I saw her, for the first time, the os uteri was dilated and the tumour, as I have said, lay above the os. There was nothing to prevent the escape of blood if it were poured into the uterine cavity, for the exit from the cavity was sufficiently free; but the truth was, that it appeared as if the system had been so exhausted by the long continued drain of blood that it was incapable of losing more, or it may be explained by the fact that the cervical canal having been dilated by the gradual descent of the tumour, the uterus contracted closely around it, thus making constant efforts to expel it, which circumstance would have, no doubt, occurred after some time, and thus in time it would have become an extra-uterine polypus.

DR. KENNEDY said he had seen in *The Edinburgh Medical Journal* a record of a series of cases where unpleasant symptoms followed the use of the seatangle. Some of the cases were exceedingly serious.

DR. ATTHILL.—There is generally in these cases more than one factor present. You are dealing with a case of acute hæmorrhage in a woman in a reduced and anæmic condition of health liable to the occurrence of unpleasant symptoms. You have to dilate the cervix with seatangle, to explore the interior of the uterus, probably to remove an unhealthy

growth or polypus. It is very hard to say which of these different agents may be the cause of any troublesome symptoms. The seatangle is less likely to be followed by inflammation than the sponge.

DR. KIDD said his experience was much the same as Dr. Atthill's; the process now generally used, and which he might claim to have introduced, was, he believed, more devoid of danger than any other. The question is—Are we to allow a patient to drain away her life-blood and die from hæmorrhage, or are we to dilate the uterus, ascertain the cause, and remove it? By the process he had suggested the uterus can be dilated with seatangle or tupula in twenty-four, or in difficult cases forty-eight, hours to an extent that by the prepared sponge would probably occupy a week or more and be attended with proportionate danger. There is no operation in surgery devoid of danger, and more especially in uterine surgery. Even the every-day operation of passing the uterine sound has been followed by fatal results, yet most gynæcologists do it many times a day without hesitation; and in like manner the very small risk attending dilatation of the uterus should not deter anyone from doing it in cases where uterine hæmorrhage cannot be controlled by other means.

THE PRESIDENT.—I have used seatangle frequently with impunity; but there were two cases in which I used it. One was the case of a young woman, who was very anæmic, blanched, and who seemed to suffer from a uterine tumour. I had no means of ascertaining this until I dilated her uterus. I found nothing to cause the hæmorrhage—no tumour. This woman got perfectly well, and for many months remained well, and had no hæmorrhage except at the usual menstrual periods. She went home. Some months afterwards she returned as bad as ever, and very blanched indeed, and at each menstrual period she suffered a great deal of pain, and had the same symptoms as on the first occasion. I again dilated her uterus with considerable care, and on that occasion Dr. Atthill saw her with me. We examined her very carefully, but we could discover nothing. I had not the slightest doubt in my mind of the necessity for using the seatangle. On the third day afterwards she died. Her friends took the body away as rapidly as possible, and I could not hold a *post mortem* examination.

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TRISMUS.

PROFESSOR GERHARDT reports (*Deutsches Archiv f. klin. Medicin*) two cases of trismus—one caused by an unilateral otitis media, the other by an intense inflammation of the mucous membrane of the mouth. In both of the cases he obtained a quick recovery by the application of the constant current in a few sittings.

KARL KAUFMANN.

## PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—ARTHUR WYNNE FOOT, M.D.

Secretary—E. H. BENNETT, M.D.

*Perityphlitis*.—The PRESIDENT (Dr. A. W. Foot) said the preparation which he brought forward was illustrative of one of the most serious of the inflammatory processes in the right iliac fossa. It was an instance of phlegmonous inflammation in the areolar tissue behind the cæcum. When the retroperitoneal connective tissue, which lies behind the cæcum over the iliac fossa, is the seat of inflammation and abscess the disease is called perityphlitis. The circumscribed peritonitis which attacks the serous coat of the cæcum and its neighbourhood is called typhlitis. That this condition is not present in this case can be seen from the normal appearance of the peritoneal investment of that part of the intestine. The suppuration which resulted in this case was of vast dimensions—an elongated sac, extending upwards from the cæcum for ten inches to the under-surface of the liver, displacing the right kidney forwards and inwards. The contents of the abscess consisted of at least a quart of greyish gruel-coloured pus, of a horribly foetid odour. The parts laid before the Society represent the anterior boundaries of the suppuration—viz., the cæcum, ascending colon, and right kidney; the kidney is seen to have been pushed or floated out from beneath the colon, so much inwards and forwards as almost to ride on the ridge of the vertebral bodies. When the hand introduced into the lower part of the sac, which was close to Poupart's ligament, was passed upwards, it impinged upon the under-surface of the right lobe of the liver, and at first sight it seemed as if the kidney had disappeared, till its position was ascertained to be quite to the left of its normal situation. When the anterior boundaries of the suppuration had been removed and the matter displaced by a stream of water, the iliacus and psoas muscles were found pulpified and disintegrated into ragged shreds of a bottle-green colour, and horribly stinking, among which the strands of the lumbar plexus stood out boldly white; part of the quadratus lumborum muscle was similarly disintegrated, and many pulpy shreds of connective tissue adhered to the sides of the abscess like patches of decayed chamois leather. The ileo-cæcal vein and the internal iliac vein were plugged with thrombic coagula, which extended as far as the vena cava inferior. The liver was large (weight 84 oz.), soft, pale, and greasy. It is to be regretted that a minute

examination of the liver was omitted, owing to unavoidable hurry at the *post mortem* examination, as in such cases, on account of the implication of radicles of the portal vein (the ileo-cæcal vein), there often results pylephlebitis with metastatic abscesses in the liver.

All observers who have collected their experience of the inflammatory affections of the right iliac fossa agree that they occur much more frequently in the male than in the female. Bamberger places the ratio at 26:4; and, further, according to this observer's statistics, these diseases occur most frequently between the ages of sixteen and thirty-five.

The subject of this case was a man, thirty years of age. On Friday, 15th of October, while driving his master's carriage, at 4 p.m., he was struck with a sudden "pain in the stomach." Before going out to drive he had been in his usual good health, and had eaten a hearty dinner of fish and vegetables. After being under medical treatment for a week at home he was removed to hospital 21st October. At that time he lay on his back, his legs fixed, complaining loudly of pain in the right lumbar region, the region of the cæcum, and the right half of the abdomen generally. His temperature was febrile; he was sleepless, thirsty, and had great difficulty in shifting his position. Dr. Foot was satisfied with recognising the fact that inflammation existed in the right iliac fossa without attempting to distinguish whether the cæcum, the vermiform process, or the retroperitoneal areolar tissue, were the starting point—the distinction being in many cases impossible, and at the same time a matter of no practical importance, owing to the fact that these forms of inflammation pass into one another, the processes mutually involving each other. Having ascertained that there was no fæcal impaction in the cæcum, his bowels were locked up with opium, under the influence of which he was kept till his head got too much confused. As early as the 25th October, four days after his admission, pericæcal abscess was prognosticated, and this forecast was written on his card at that time. During the early part of the case peritonitis threatened to extend from the focus in the right iliac fossa, but subsided under the use of opium, leeching, and poultices, and there was no trace of it in the abdomen after death beyond a slight dryness and comparative adhesiveness of the serous membrane. He lived for six weeks and three days after the initial pain in the stomach. As time passed on his temperature never came down; his mean average daily temperature (76 observations) was 101.4°; pain in the groin and right lumbar region continued and increased; he completely lost the use of the right thigh, and any attempt to move the right limb gave him horrible pain. His "roars" were said to be "dreadful" at any attempt to stir him—consequently from his lying in one position, partly on his left side, he got a bed-sore on the left half of the sacrum. On the 15th of November some blood and pus came away with a motion from the bowels, and it was hoped the abscess would adopt this mode of



exit; but except on this occasion no pus was observed in the stools, which were carefully watched. On 23rd November he had a severe rigor early in the morning, followed by profuse perspirations—symptoms which were regarded as conclusive of the establishment of pyæmia; and sweating from this on to his death became a prominent feature. To this delirium was soon added. The evening before his death his temperature reached  $105\cdot2^{\circ}$  F., and he died at 4 a.m. the following day, 29th Nov., 1880—as was observed before, six weeks and three days after he was first seized with pain.

The inflammation of the retroperitoneal connective tissue in this case seems to have arisen independently. There is no evidence of ulceration in the cæcum or colon; the intestine has been inflated, and bears distension well without any leakage; the pus was not mixed with particles of fæces, nor had it a feculent odour; its aroma, if it would admit of description, was a compound of that of very carious teeth and of extremely high game while roasting—it was essentially a smell of rottenness. The vermiform appendix seems unconcerned with the pericæcal abscess. Although the inflammation of the areolar tissue behind the cæcum is, in the majority of instances, connected with a primary typhlitis, yet he (Dr. Foot) could not refrain from regarding this case as one in which it had been idiopathic, and had occurred as an isolated process.—*December 4, 1880.*

*Hydrophobia.*—MR. KILGARRIFF said: I have the honour to exhibit to the Society the encephalon, spinal cord, cæcum, part of the trachea, and portion of the jejunum and ileum, taken from the body of a patient who died from hydrophobia, in the Mater Misericordiæ Hospital, on the 5th of last July.

From inquiries instituted, and my own observation, I am enabled to give the history of the case.

Three months previous to his admission, while walking along the Glasnevin-road, he met a small dog which he endeavoured to stop. The animal, jumping at him, bit him in the nose. The wound was not cauterised, but was protected by adhesive plaister, and, as it healed quickly, he thought no more about it. He did not know the dog which inflicted the wound, nor could I learn anything of its previous or subsequent history.

On Thursday evening, the 1st of July, just three months after being bitten, he complained of pain in the right side of his head, which pain, he remarked, would leave the head and settle in the throat. He sweated profusely, was very despondent, and had several rigors.

On Friday he felt weaker, continued rational, took milk without apparent difficulty, and sweated continuously.

On Saturday he was in the same condition, but on trying to take some

tea he experienced great difficulty in swallowing it, and expressed his belief that there were lumps in his throat, which were drawn together in his attempts to swallow. He bled frequently from the nose during the day. Towards evening he rambled somewhat in his conversation.

On Sunday morning he was no better, and the sight of fluids brought on a convulsive fit. He was now sent to hospital.

The lad's age was sixteen years, he seemed badly nourished, and rather overgrown. He presented a wild, anxious look; objected strongly to be touched, as it made him shiver. Flashing a bright light before him, or pouring in his presence water from one vessel to another, made him suddenly recoil, his face being contorted and expressive of the deepest distress—his hands in pantomime showing his desire that the light or fluid might be removed from his sight. On presenting him a goblet of water to drink he sat up in the bed, steadied himself, and on making a vigorous effort to gulph down some—in the attempt he became convulsed, jumped up, and seemed to be choking, the risus sardonicus being well marked—the water forthwith spurting from his mouth and nose. He also suffered from spasmodic difficulty of breathing—the slightest draught of air, even that induced by suddenly opening the door of his chamber, would instantly bring on a spasmodic seizure. He bore sedative enemata fairly, and slept off and on, sweating, however, profusely. He was delirious, but gave rational replies to some questions. On this evening his temperature was  $101^{\circ}$ , pulse 84, full, but irregular.

Monday.—He had a restless night, voiding his urine about twenty times—each act of micturition a fit—and in the morning was very weak; temperature  $101^{\circ}$ ; pulse 116, weak, irregular, and compressible. He was now delirious, and seemed desirous to change from his bed to another. Viscid saliva continued to flow profusely from his mouth. At 2 o'clock, p.m., he vomited some bilious matter, and continued to do so for some hours. Towards evening he became violently delirious, striking at everybody who approached his bed, and asking them not to stab him. The slightest touch to his face brought on the risus sardonicus, and, independently of this, he had spasms every few minutes.

He died, at 10 p.m., from dyspnœa, due to bronchial catarrh, spasm of the larynx, and of the muscles of trachea and bronchial tubes. Half an hour after death the temperature in the axilla was  $103^{\circ}$  Fahr.

The *post mortem* was made twenty-five hours after death. The rigor mortis well marked; eyes open; muscles of face contracted; risus sardonicus pronounced. Decomposition had already set in, as evidenced by the blue discoloration of abdomen and hands. The muscles were dark-coloured, firm, and of normal consistency; the blood fluid. The heart, liver, spleen, and kidneys were apparently healthy, but slightly congested. The lungs were normal in consistence, but very deeply congested. The lining membrane of the trachea and bronchial tubes was of a livid colour,

and covered with a tenacious, frothy mucus. The stomach, duodenum, and upper part of the jejunum were almost normal. The upper portion of the ileum and lower part of the jejunum contrasted strongly in appearance with the rest of the intestine; these parts being of a deep red colour, and dotted on the outside, here and there, with specks of lymph; there was also some lymph mixed up with the abdominal fluid. Peyer's patches were deeply livid and remarkably distinct. The brain and spinal cord were normal apparently in consistence, and slightly congested. The remarkable feature in the case is the inflamed condition of the lower portion of the jejunum and adjoining part of the ileum, with the implication of Peyer's patches.—*December 4, 1880.*

*Specimens of Colles' Fracture (Recent, Comminuted).—*DR. BENNETT said: I have here two recent specimens of Colles' fracture, and with them a third specimen, of the history of which I know nothing further than that it was taken from a dissecting-room subject. They happen to be all three examples of the form of fracture which exhibits comminution of the lower fragments. The first of the specimens was taken from a man who fell from the coping-stone of the Library of Trinity College (a height of sixty-three feet) to the ground. He fell across the chains of the grass plot, which happened to be in the line of his descent, and sustained a fracture of the pelvis with complete separation of the symphysis pubis. The details of that part of the case are not before us, and I only mention the facts of the fall to show—which the height alone does—that the injuries were caused by extreme violence. At the ulnar side of the palmar aspect of the forearm the upper fragment of the radius was driven through the skin, close beside the ulna, and projected into the grass, and was deeply stained, and damaged to some extent, by contact with the earth. The second specimen was obtained from a man whose case, as far as the os calcis was concerned, was brought before the Society at a previous meeting. He fell from a two-story house and landed on the pavement; and there was a fracture of the left os calcis and a Colles' fracture of the left forearm, which presented in the living body the distinct features of the injury. In both these injuries, which were caused by great violence, the lines of fracture are seen to be absolutely the same. In the third specimen also the lines of fracture are similar, but in it union has taken place. In all three the lines of fracture of the carpal articular surface of the radius start from the centre of the articular facette for the ulna. From this point they pass along the surface outwards nearer the dorsal than the palmar margin, and branch backwards into the grooves for the extensor tendons and forwards by one or two fissures. In a communication which I made to the British Medical Association in Cork I gave the facts of twenty-five cases of comminuted Colles' fractures, and in all these except one I found that the lines of

fracture passed through the same course as in these three specimens. These two are the only recent specimens I have myself dissected of these injuries. In both cases the force was extreme, and they go far to establish the constancy of the lines of fracture, even where the force is excessive. As the results are constant we may infer that the cause which produces the fracture is the same in all. When we have only one exception to the rule in the whole series we may say that the cause is the same in all. The cause, in all cases that we have been able to ascertain anything about, has been the impaction of the upper fragment into the lower. In the case of the man who fell the sixty-three feet the impaction was completely undone by the violence, and the fragments of bone passed not only through the fragments of the radius, but clean out into the ground on which he fell. In the other case there was no wound whatever in connexion with the fracture; but the lines of injury are absolutely the same in the two—branching from the ulnar facette towards the dorsal side, with a branch leading outwards and backwards, and again outwards and forwards. In the Hunterian Museum, in London, I came across a specimen which presents a complication of Colles' fracture—a vertical fracture of the head of the ulna without displacement of the detached fragment. In this compound fracture this injury of the ulna exists. The lines of the fracture, as far as my memory serves me, are exactly the same as in the instance in the Hunterian Museum, and these are the only instances of the complication that I have seen. It is interesting to see how we can explain such an occurrence. It is difficult to understand how the ulna can be split vertically in such an injury without any detachment of the fracture. From the appearances seen at the upper edge, where there is an indentation, it is quite clear how the fracture was produced—namely, that the upper fragment of the radius, in passing through the soft parts, wounded the ulna in its escape outwards, and that it splintered without entirely detaching the side of the head of the ulna. These three specimens and one which I recorded last session present also the complications of fracture of the ulnar styloid in two, in one detachment of the lateral ligament from its tip.—*December 4, 1880.*

*Lumbar Abscess.*—MR. STOKES said: This is a specimen of considerable interest as eliciting a fact connected with chronic abscess which I never met before. A child of about four years of age was admitted recently into the Richmond Hospital, under my care, suffering from lumbar abscess situated somewhat lower down than what is usually the site of those collections. Before opening it I made a careful examination of the spinal column to see if there was evidence of spinal caries, but found there was not. The collection was a very large one, and I opened it antiseptically, and gave exit to about half a pint of thin, ichorous, whey-



like fluid matter containing large flakes of lymph—the usual kind of fluid one finds in chronic abscesses. When the cavity of the abscess was nearly evacuated, on pressing the sides of the sac of the abscess together, I felt a hard and apparently movable body. I enlarged the opening, passed in a forceps, and removed one of those fragments of bone which you see before you. I found that there were still other fragments, and proceeded to remove them also. I removed in this way the five fragments now before you. Wishing to explore the cavity of the abscess more fully I enlarged the opening again, and passed my finger all round the sac, to ascertain if there was any evidence of necrosis of the ilium, but found the sac intact, except, of course, at the part where the opening had been made. I washed out the cavity of the abscess well with a weak solution of carbolic acid, adopting the hyper-distension method of the late Mr. Callender, and then dressed it with the usual Listerian dressing. The case eventually did very well. The occurrence of these fragments of bone in a chronic abscess is a novel phenomenon, of which I am not able to offer any explanation whatever. It has been suggested to me that possibly the child might have sustained a fall, and that a fracture of the epiphysis of the crest of the ilium might have taken place. This theory can, I think, hardly be considered as tenable, inasmuch as the epiphysis of the crest of the ilium, according to Professor Humphrey and, I believe, other authorities on osteology, is one that appears late—namely, about the sixteenth or eighteenth year. Three of these fragments appear to have originally formed one piece; as to whether the fourth and fifth were connected with each other or the rest I am not certain.

DR. BENNETT.—The most important question is—Are they bone or not? I do not know whether or not a microscopic examination has been made, but they do not appear like the cancellated bone of the skeleton. They are not portions of a rib, nor, as far as we can judge, of the ilium. Are they a calcification of the cyst?

MR. STOKES.—I will ask Professor Bennett to inspect this microscopical preparation, kindly made for me by Mr. Abraham, and I think he will see that it is true bone.

DR. BENNETT.—I merely asked if a microscopic examination had been made. The naked-eye appearances are not satisfactory. The microscopic appearances, of course, at once decide the question.

MR. ABRAHAM stated that he made a microscopic examination of portions of the fragments and found them to be true bone.

MR. THOMSON.—I saw the case just when it was operated on, and on passing my hand over the abscess in the direction of the crest of the ilium the child distinctly complained of a tender spot running along in that direction, and after the abscess was opened the forceps that removed these pieces certainly went in the direction of the crest of the ilium. Whether they are a portion of the ilium or not I am not prepared to say,

but I am quite satisfied that two of them are not transverse portions of any vertebræ, because their edges fit together, showing that they were originally one. I think Mr. Stokes has put the date of the development of the epiphysis a little later than usual. It begins earlier than he said, and the union takes place about the eighteenth or twentieth year.

DR. BENNETT.—It is not normal bone, but bone of some new formation. It is not part of the bone of the skeleton.

DR. HARVEY.—There is no doubt that it is ordinary bone. I think it must have been a growth in the fibrous tissue. I do not say that it is calcification of the fibrous tissue, but I think it possible that it is a new formation in the abscess. It is true bone, and the ossification must have taken place entirely independently of the bones of the skeleton.—*December 4, 1880.*

*Perforation of the Intestines in Enteric Fever.*—DR. A. W. FOOT presented a specimen of perforation of the bowels which took place on the forty-first day of enteric fever, in a boy of ten years of age. The termination of enteric fever in this manner is not very uncommon. It was calculated by Murchison that 1 in every 36 persons attacked with enteric fever dies of perforation. Nor was the date of the event uncommon, as it usually occurs in the advanced stages of the fever. The peculiar points in the case were three—viz., the age of the patient, the absence of acute symptoms, and the occurrence of perforation in the colon as well as in the ileum. The age is unusual, for perforation is comparatively rare in children. Murchison found, in 44 cases of this lesion, but one between the ages of ten and fifteen. The absence of acute symptoms was conspicuous in this case, for there was no complaint of pain, although there was profuse extravasation of fluid, ochreous fæcal matter, and very diffuse peritonitis. The date of perforation can only be conjectured as the thirty-eighth day, because on the evening of that day he threw up all he had eaten, and next morning there was a plainly moribund expression of face. After this he rapidly sank, retaining his very acute senses to the last. He had neither tympany, tenderness, nor pain in the abdomen, did not assume a peritonitic decubitus, or exhibit any marked symptoms of collapse, so that he (Dr. Foot) was surprised to find fæcal extravasation on opening the abdomen. It reminded him of cases of peritonitis following hernia operations, in which he had noticed a remarkable latency of symptoms.

The perforation of the small intestines in this case was in the floor of a Peyer's patch, about three inches above the ileo-colic valve. There were seven well-marked ulcers in the solitary glands of the colon. That in which perforation had taken place was situated at the junction of the sigmoid flexure with the rectum, which is the site of the opening in 3 of the 5 cases collected by Murchison. It is observed by Murchison that

in children the solitary glands have a greater tendency to be attacked than in adults.—*December 11, 1880.*

*Morbus Coxæ in the Adult; Excision.*—DR. BENNETT exhibited a carious head of the femur removed from an adult by excision. He regretted that the specimen, though one of considerable importance, was unfortunately very imperfect in many details he would have wished to furnish. It might also be said that the facts of the case were more fitted for another Society than the Pathological, as the main interest of the specimen bore on the surgical treatment of the case. His object in producing the specimen here was to have the case recorded in the Society's Transactions, as they had another remarkable example of the same disease treated by the rival method, which was recorded in their Transactions of last year. Mr. Stokes had exhibited to the Society the head and neck of the femur of a man whose hip-joint he had amputated for caries of the joint. He amputated through the hip as a remedy for the disease. About the same time a case was admitted under his (Dr. Bennett's) care—that of a young man, aged between twenty and twenty-one. He had been twenty-three weeks in bed suffering from the ordinary phenomenon of advanced morbus coxæ with open abscesses. The pain was intense, and there was also active hectic fever. The question for decision was, as rest and the ordinary treatment of such cases had failed to control in the least the disease, whether or not any operative treatment was desirable. While the operation of excision of the hip was done with great freedom in the child, they had as yet but very few examples of excision of the hip performed in the adult, at least in Dublin. Indeed, experience in other places, too, was very much confined to operations on children. Of such some cases were successful, while a great number had died. The operation was extremely simple in its detail, and, compared with many other operations, perhaps there was none so easily performed as excision of the hip. The parts were removed by a single section of the saw through the bone turned out through a horseshoe excision, and the cut surface of the femur was found free from any caries. The head of the bone was carious, and the acetabulum extensively so. After the operation, as soon as the shock was over, matters went on very favourably, and the hectic ceased for two or three months. The operation was performed last May; and in fact up to midsummer it appeared as if the man was steadily, yet slowly, progressing towards recovery. As far as could be determined by physical examination, he had no organic disease of the thorax or abdomen; and, being in hectic fever and emaciated at the time of the operation, he plucked up strength, the hectic ceased, and the wound closed, all but two or three fistulous openings discharging in moderate quantity. So matters progressed through the summer. But after the summer it was apparent that although not going down he had

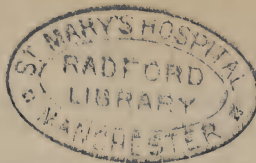
not gained ground. He was very much in the condition that he was in within ten days or a fortnight after the operation. That was in the month of September. He failed more and more during October and November. During the month of December his hectic became more marked, he suffered from diarrhœa, and his manner became changed. He was never sweet-tempered, but he then became very sour. This curious termination of the case took place—that without any visceral disease being recognisable, he suddenly became insane, and in a couple of days died comatose. Being unable, unfortunately, to obtain a *post mortem* examination, the condition of affairs as to the cause of death was obscure. What made the operation a bad one in surgery was that the diseased surface of the pelvis had to be left behind, although the caries was arrested for the time by the removal of the rubbing surfaces of the head of the femur and carious acetabulum. The difficulty to remove those parts rendered the success of the operation very doubtful; but, having succeeded in children, it was justifiable to try it in the adult. The patient had refused the other alternative—amputation of the limb. But even amputation of the limb would not have afforded much greater hope; for still the caries of the pelvis would remain. As Mr. Stokes' parallel case of amputation had been recorded, this was the proper place to exhibit the specimen.—*December 11, 1880.*

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#### FAVUS AND ITS TREATMENT BY A NEW METHOD OF DEPILATION.

DR. L. D. BULKLEY, of New York, read a paper on the above subject at the late Annual Meeting of N. Y. Medical Society. After detailing his experience with several methods which had proved unsatisfactory, he advised the preparation of sticks of various sizes, from one-fourth to three-fourths of an inch in diameter, and cut off in lengths of two or three inches. The formula was as follows:—℞. Cerae flavæ, three drachms; laccæ in tabulis, four drachms; resinæ, six drachms; picis Burgundicæ, ten drachms; gummi Dammar, one and a half ounces. By the use of such differently sized sticks, they could be applied to affected surfaces of various sizes. They melt at a comparatively low temperature, and yet are hard at that of the body. The hair should be cropped short over the part to be treated, and, as the stick is applied, a slight rotary or twisting motion is given to it. After it has been applied for several minutes, it is removed by bending it over and drawing the hairs in succession. The hairs thus left in the stick are burned off. It is sometimes necessary to repeat the operation. This operation does not work so well in ringworm of the scalp, because the result of the action of the parasite on the hairs is to render them so brittle that they very easily break off.—*N. Y. Med. Record*, Feb. 12, 1881.





# SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

## VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday, February 26, 1881.*

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin, -	333,401	818	1055	2	6	15	6	20	51	8	41.1
Belfast, -	174,412	536	510	—	2	2	—	20	11	10	38.0
Cork, -	78,642	165	175	—	2	4	—	5	9	6	28.9
Limerick, -	39,353	104	123	—	3	6	—	—	1	6	40.6
Derry, -	25,242	74	89	—	—	—	2	—	—	—	45.8
Waterford, -	23,349	63	89	—	3	1	—	—	1	5	49.6
Galway, -	15,597	42	28	—	—	—	—	—	1	1	23.3
Sligo, -	10,670	9	12	—	—	4	—	—	—	—	14.6

### Remarks.

The inclement weather which prevailed in January still leaves its mark on the statistics of deaths. The rate of mortality was very high in all the towns except Galway and Sligo. In Waterford, Londonderry, Dublin, and Limerick, it exceeded 40 per 1,000 of the population annually. The death-rate was much lower in the English and Scotch towns. While it was 37.8 per 1,000 in the sixteen principal town districts of Ireland, it was only 23.8 in twenty large English towns (including London), 23.3 in London, 27.6 in Glasgow, and 20.8 in Edinburgh. Omitting the deaths of persons admitted into public institutions from localities outside the district, the death-rate of the Dublin registration district was 40.7 per 1,000, while that within the municipal boundary of Dublin was 44.3 per 1,000. Zymotic diseases were not very fatal in Dublin. They caused 135 deaths, compared with an average of 162.9 deaths in the corresponding four weeks of the previous ten years. Fever was the most destructive to life, the deaths attributed to this group of diseases being 51—a number equal to the deaths from fever in the

preceding four weeks (ending Saturday, January 29). No less than 36 deaths were caused by typhus; 11 were caused by typhoid, and 4 were stated to have been due to "simple continued fever." Smallpox and scarlatina show a lessened fatality; whooping-cough and measles a slightly increased fatality. Whooping-cough and fever were also prevalent and fatal in Belfast and Cork, and scarlatina continued to be widely diffused throughout the towns. Diseases of the organs of respiration were again very destructive to life in Dublin. They caused 328 deaths, being 7 more than in the previous four weeks, and 121·9 more than a ten years' average (226·1) for the corresponding period. The deaths from bronchitis were 263 (average = 182·2); those from pneumonia were 42 (average = 23·6). These very high figures were the result chiefly of the bitter cold of January. At the close of the four weeks the numbers of cases of the principal epidemic diseases under treatment in the chief hospitals of Dublin were as follow—smallpox 4, measles 3, scarlatina 37, typhus 124, typhoid 18, and pneumonia 13.

## METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of February, 1881.*

Mean Height of Barometer,	-	-	-	29·787 inches.
Maximal Height of Barometer (on 21st at 9 p.m.),	-	-	-	30·423 „
Minimal Height of Barometer (on 10th at 10 30 p.m.),	-	-	-	28·614 „
Mean Dry-bulb Temperature,	-	-	-	39·9°.
Mean Wet-bulb Temperature,	-	-	-	38·3°.
Mean Dew-point Temperature,	-	-	-	36·0°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·213 inch.
Mean Humidity,	-	-	-	86·1 per cent.
Highest Temperature in Shade (on 7th),	-	-	-	54·3°.
Lowest Temperature in Shade (on 28th),	-	-	-	27·1°.
Lowest Temperature on Grass (Radiation) (on 28th),	-	-	-	24·2°.
Mean Amount of Cloud,	-	-	-	70·9 per cent.
Rainfall (on 18 days),	-	-	-	2·879 inches.
General Directions of Wind,	-	-	-	E.S.E. & W.N.W.

*Remarks.*

Although the diurnal ranges of temperature were not extreme, this was a rather cold, dull month. The mean temperature was 2·7° below the average for February of the preceding fifteen years, and the amount of cloud also was very large. The rainy days were 18 in number—that is, about the average. The first few days were mild, but damp. On the afternoon of the 6th a very deep depression made its appearance off the west of Ireland. In Dublin the barometer fell quickly at night with strong southerly winds and rain. At 2 30 p.m. next day there was a

fierce squall, with heavy hail and rain, thunder and lightning. On the 9th a new disturbance brought a renewal of rain and storm. The barometer fell to 28·614 inches in Dublin at 10 30 p.m. of the 10th, and then rose with extreme rapidity to 30·064 inches at 9 a.m. of the 12th. It is to be noted that during this stormy period great cold prevailed in Scandinavia, and this so far influenced the weather in Scotland as to cause heavy falls of sleet and snow in that part of the United Kingdom. After the 13th an anticyclone became established over the Baltic Sea and Scandinavia, and the British Islands came gradually under the influence of this system of high pressure. At first there were several days of overcast, dull, damp, chilly weather. In England the thermometer was at this time several degrees lower than in Ireland. On and after the 19th, however, the air was everywhere colder and drier. Early on the morning of the 21st showers of fine hail began to fall in Dublin, and during the following day and night there were occasional showers of cold rain and sleet. The last three days of the month were very wintery. A depression passed southwards across the British Isles, and polar winds prevailed with considerable falls of sleet, snow, and hail. On the morning of the 28th about an inch and a half of snow lay on the ground in Dublin. There was an aurora at and after midnight of the 1st. Solar halos were seen on the 6th and 12th. The atmosphere was more or less foggy on the 2nd, 6th, 12th, 16th, 17th, and 24th. Sleet or snow fell on the 11th, 22nd, 26th, 27th, and 28th. Hail was observed on the 7th, 11th, 21st, 26th, 27th, and 28th. Thunder and lightning occurred on the afternoon of the 7th.

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#### FRACTURE OF THE ASTRAGALUS.

M. MOLLIERE, after giving three cases in which this fracture occurred (*Lyon Méd.*, Oct. 17, 1880), comes to the following conclusions with regard to this obscure and often overlooked accident. The cases in which it occurs are generally those where a severe injury renders amputation necessary, and where, on this account, the particular injury to the astragalus is not studied. It may happen, however, and often does, that in obscure injuries about the ankle-joint the astragalus has been fractured at its neck. The anterior fragment alone may suffer displacement. One of the symptoms of the fracture is a contraction of the inner surface of the foot, and on this account the prognosis should be reserved, as the injury may result in a talipes equinovarus. Should this happen, it must be met by division of the tendo Achillis, by massage, and by suitable apparatus. Fracture without external wound may cause a suppuration of the joint, from the complete separation and necrosis of a small fragment.—*N. Y. Med. Jour.*, Feb., 1881.

## PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

### ADMINISTRATION OF NITRITE OF AMYL.

DR. PIFFARD lately described a way in which this drug should be given in order to circumvent all danger. It consisted essentially of filling a bottle with cotton and then saturating it with the amyl nitrite. Referring to this, Dr. Squib remarked that it was quite safe to carry vials filled with the fluid. He was of opinion that the dangers likely to follow a free inhalation of the drug had been considerably exaggerated. Dr. Seguin endorses Dr. Piffard's device for giving amyl, as he has used the same plan for some three years. He has much less fear of amyl than he had two years ago. It is now his custom to tell patients to sniff hard and rapidly, until their faces flush. He has never known any dangerous or unpleasant results to occur.—*N. Y. Med. Record*, Feb., 1881.

### FUCHSINE IN BRIGHT'S DISEASE.

PROFESSOR DE RENZIE, of Genoa, treated a case of Bright's disease by the administration of fuchsine. He began with a dose of one-third grain given twice daily in pill, and rose gradually to 40 grains during the twenty-four hours. The first day he remarked a certain improvement in the general state, a diminution of the albumen in the urine, and a visible fall in the dropsy. After three weeks the albumen had nearly quite disappeared. A few days after the beginning and during the course of the cure the urine, the plasma of the blood, and the mucous membrane of the digestive tract showed a reddish colour. In a second case the administration of fuchsine was unsuccessful; also the secretion of the pigments in the urine failed. Renzie believes that success depends upon the possibility of secretion.

KARL KAUFMANN.

### ANTIPYRETIC ACTION OF CHRONIC NEPHRITIS.

THAT a febrile disease in a patient suffering from chronic nephritis can occur without any elevation of temperature was noticed some time ago. Dr. Raymond (Vulpian's *Clinique médicale*, Paris, 1879) explained the absence of febrile movement in a case of convulsions, by the fact that the patient suffered from chronic nephritis, which counteracted the tendency of the muscular contractions to produce a rise of temperature. Prof. Botkin, of St. Petersburg, in his lectures, advanced the idea that the diseased function of the kidneys leads to the accumulation in the



system of substances preventing the occurrence of the febrile state. Dr. Bogojawlensky (Botkin's *Archiv*, Vol. IV., p. 235) reported two cases relating to this question. A patient having nephritis was attacked with an exceedingly well-marked croupous pneumonia, but during the third to sixth days his temperature remained normal. Fever appeared at the close of the sixth day, terminating on the next, the critical day of pneumonia. Another nephritic was seized with pleurisy on the left side, and pericarditis with fever of an irregular type. A few days later a phlegmonous inflammation of the axillary glands appeared, extending toward the adjacent tissues; pleurisy and pericarditis became worse, urine diminished and uræmia developed, lasting three days. Despite the formation of an immense abscess and the aggravation of his pleurisy and pericarditis, pyrexia ceased, and the temperature continued normal, with the occasional slight elevations, entirely out of proportion to the extent and intensity of the inflammatory process. In the same volume (p. 306) Dr. Stolnikoff gives the account of the experimental study of this question. He induced chronic inflammation of the kidneys in rabbits by compressing the renal artery, and after the renal lesion existed from one and one-half to three months, he injected into their cranial and thoracic cavities various irritating and septic fluids. He states that, in the animals with diseased kidneys, the temperature was much lower than in healthy animals treated in a like manner, and that at times there was no pyrexia at all.—*Mediz. Obozrenie*, 1880, XIV., p. 436; and *N. Y. Med. Record*, Feb., 1881.

#### RADICAL TREATMENT OF HYDROCELE BY INJECTION OF CARBOLIC ACID.

At a meeting of the Philadelphia Academy of Surgery, June 7, 1880, Dr. R. J. Lewis stated that in 1872 he had begun to treat hydrocele by carbolic acid injections, because a more plastic grade of inflammation than that obtained by ordinary injections was required, and because incision only accomplished a cure through suppuration. His method is to withdraw the fluid by an ordinary trocar, and then introduce the long nozzle of a syringe through the trocar into the vaginal sac. By this means the carbolic acid is thrown into the cavity, and there is no danger of its being injected into the cellular tissue of the scrotum. The carbolic acid crystals are merely liquified by slight heat, or by a few drops of glycerine. To keep the injecting fluid ready for use at all states of temperature, about ten per cent. of glycerine or water may be added to the crystals. The amount of carbolic acid which Dr. Lewis injects is one half a fluid drachm, and this is allowed to remain in the vaginal tunic. The operation is almost, if not entirely, painless, because of the local anæsthetic action of carbolic acid. The patients sometimes exclaim at the moment of introduction, but have a sensation of numbness rather than of pain. The pain, when tincture of iodine is employed, is

much greater. Care should be observed to allow no acid to flow upon the external surface of the scrotum, for pain and inflammation will follow such contact. After the injection the patient is permitted to walk about the house until the weight and slight soreness of the scrotum cause him to lie upon a bed or lounge. The results of this method of treatment are excellent, for undue inflammation does not occur, there is no marked pain, and a radical cure generally ensues. Dr. Lewis has never seen suppuration or sloughing follow this manner of dealing with hydrocele.—*Philadelphia Medical Times*, Nov. 6, 1880.

#### DIABETIC CATARACTS.

GALEZOWSKI (*Recueil d'Ophthal.*, Aug., 1880) thinks that in these cases the blood must be saturated with sugar, and hence all the tissues and liquids of the organism contain a greater or less quantity of sugar. The liquids of the eye are saturated with glucose, which causes more or less interference with the nutrition of the lens. He thinks diabetic cataracts are of two sorts: some are the result of too much glucose in the blood and urine, and these are glycosuric cataracts by saturation; others are the result of a simple coincidence. The origin of the cataract is traceable directly to the faulty composition of the aqueous humor. Glycosuric cataracts occur more frequently among fat diabetic individuals than thin ones. The cataract in these cases begins almost always in the posterior laminae of the lens, and generally advances very rapidly; hence there is no time for the cataract to become hard and voluminous. Diabetic cataracts may be simple and entirely uncomplicated by any other alteration in the eyes, or there may also be present amblyopia with or without hemiopia, retinal hæmorrhages, &c. The latter may not interfere with the cicatrization of the corneal wound, but may compromise the ultimate visual result. A large corneal wound cicatrises but slowly in a diabetic patient, and the cornea is in danger of sloughing. Hence, in the majority of cases, linear extraction is the method to be employed, though sometimes recourse must be had to extraction by the peripheral flap, with excision of the iris.—*N. Y. Med. Jour.*, Jan., 1881.

#### ORANGE-COLOURED SUPPURATION.

M. VERNEUIL (*Arch. Gén. de Méd.*, Dec. 1880, and *N. Y. Med. Jour.*), having met with a few cases in which a *yellow pus* was secreted in wounds, has given the results of his study into the ætiology and pathology of the peculiar condition. The orange colour is due to a peculiar change in the colouring matter of the blood caused by the suppurating surface, which seems to have, in this respect, a function analogous to that of the liver and kidneys. The cause of the peculiar appearance and its mode of production are both obscure. There can be little doubt that it stands in a certain relation to pyæmia, being often one of

the first signs of that constitutional state; but the relation is not so intimate as has been supposed, and a patient who presents this peculiar symptom may die or get well without at any time showing signs of the pyæmic state. It is always a sign which should cause uneasiness to the surgeon, and it always indicates a constitutional condition which greatly aggravates the prognosis of an injury, and it is to this constitutional state, rather than to the wound itself, that effective treatment must be directed. [In a phthisical patient, with vomicae in the apices of both lungs, a considerable portion of the purulent expectoration was observed on one occasion only to have a similar appearance to that above described.—ED., PERISCOPE.]

#### PRIMARY CARCINOMA OF THE LUNGS.

At a recent meeting of the New York Pathological Society, Dr. Ripley presented a specimen of primary infiltrating medullary carcinoma affecting all the lobes of *both* lungs of a man aged fifty-eight. The disease was of three months duration. There was no secondary affection of the bronchial glands. Both kidneys presented secondary miliary deposits. The pleura was unaffected. The subpleural reticulum of lymphatics contained epithelioid corpuscles. The mode of growth was probably along the lymphatic channels.—*N. Y. Med. Record*, Dec. 18, 1880.

#### A THREE-CHAMBERED HEART.

DR. CHIARI describes (*Jahrbuch für Kinderheilkunde*) a heart with three cavities found in a child of four and a half years, which had died from diphtheria. During life the only symptom was a slight dyspnœa; sometimes a little cyanosis was observed. The heart consisted of two perfectly distinct auricles and only one ventricle. At the base of the latter the auriculo-ventricular orifices with their valves and papillary muscles were found quite normal. The two arterial orifices occupied both their normal situation, separated by a septum, were perfectly distinct from each other, and provided with their semilunar valves.

KARL KAUFMANN.

#### A NEW ANTI-PRURITIC REMEDY.

As an addition to the usual remedies (opium, chloral, bromide of potassium, belladonna, and carbolic acid) given internally for the relief of the symptoms of itching, which so frequently forms a prominent feature in certain skin diseases, Dr. Bulkley recommends gelsemium. He usually directs ten drops of the tincture to be taken immediately before going to bed. If in half an hour there is no apparent effect, he repeats the remedy in somewhat larger dose, twelve or fifteen drops, and so on, until results are obtained.—*N. Y. Med. Jour.*, Jan., 1881.

# THE DUBLIN JOURNAL

OF

## MEDICAL SCIENCE.

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### PART I.

### ORIGINAL COMMUNICATIONS.

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ART. XIV.—*On Movable Kidneys.*<sup>a</sup> By ARTHUR WYNNE FOOT, M.D.; Fellow, King and Queen's College of Physicians; Senior Physician, Meath Hospital; President of the Pathological Society of Dublin, &c.

ALTHOUGH the members of the Biological Club are, no doubt, well aware of the frequency and the pathological reality of movable kidneys, yet I have found so much disbelief on both these points in quarters where it was to be little expected, that I have chosen for my communication this evening to make a few remarks on the subject. I have met with but four cases myself in which I was satisfied of the existence of a loose condition of the kidneys, but I believe that anyone who makes it his business to examine people systematically for this condition will find it not unfrequently, as did Rollet,<sup>b</sup> who states that of 5,500 patients admitted into Oppolzer's Clinique, and examined carefully as to this point, 22 had movable kidneys—a proportion equal to 1 in 250.

The disposition to leave its ordinary situation is relatively more frequent in the case of the kidney than in that of the liver or spleen, and hence the expressions movable, loose, floating, migratory, wandering, as applied to the kidney, are quite frequent in modern books. As movable kidneys are not, in virtue of their being so, a cause of death, they are not discovered so frequently at *post mortem* examinations as there is reason to believe they

<sup>a</sup> Read before the Dublin Biological Club, on Tuesday, March 29, 1881.

<sup>b</sup> *Path. und Therap. der beweglichen Niere.* Erlangen. 1866.



occur in life ; yet there are many instances of their having been so found. Durham<sup>a</sup> has collected accounts of ten cases in which abnormal mobility of the kidney was found after death, and in many of which a correct diagnosis had been made during life. There are accounts of eight other *post mortem* examinations appended to the report of the Committee of the Pathological Society of London,<sup>b</sup> appointed to inquire into the matter of movable kidneys, and there are still other instances not included in these two summaries.

It is likely that movable kidneys occur much more frequently than is usually believed, but an accurate estimate of the actual frequency is not possible, because the anomaly very frequently gives rise to no symptoms, and is only accidentally discovered during an examination of the abdomen undertaken for some other reason ; and even should a movable kidney give rise to abdominal pains and obscure disturbances in the belly, the condition of the kidney will escape notice as long as a careful objective examination is deferred.

The movability of the kidneys is first treated of in detail by Rayer,<sup>c</sup> who gives 8 cases of the affection. E. Fritz,<sup>d</sup> in 1859, had collected, from various sources, 35 cases, all which had been published prior to that date, and on these he based his memoir on floating kidneys. In 1860 Hare<sup>e</sup> had collected a total of 40 more or less perfectly recorded cases of persons affected with mobility of the kidney. Roberts<sup>f</sup> (1872) bases his account on an analysis of 70 cases. Still more recently (1877) Ebstein<sup>g</sup> has collated the reports of 96 cases, and it is likely the number of cases observed and recorded will rapidly increase as soon as the authors just mentioned have succeeded in directing more general attention to the subject.

The female sex, as was indicated by Rayer, is singularly prone to this condition, as is seen by the following table :—

	Rayer.	Fritz.	Hare.	Roberts.	Ebstein.
Female, -	7	30	35	61	82
Male, -	1	5	5	9	14
Cases, -	8	35	40	70	96

<sup>a</sup> Guy's Hosp. Rep. 1860. 3rd Ser. Vol. VI., p. 404.

<sup>b</sup> Trans. 1876. Vol. XXVII.

<sup>c</sup> Traité des Maladies des Reins. 1841. Tome III., pp. 783-801.

<sup>d</sup> Des Reins flottants. Arch. Gén. de Médecine. 1859. T. II., p. 158.

<sup>e</sup> Med. Times and Gazette, 14th Jan., 1860. P. 30.

<sup>f</sup> Urin. and Ren. Dis. Second Edition. P. 597.

<sup>g</sup> Ziemssen. Cyclop. Pract. Med. Vol. XV., p. 765.

The right kidney is very much more locomotive than the left, and in several cases both were loose :—

	Rayer.	Fritz.	Hare.	Roberts.	Ebstein.
R. kidney,	7	19	21	42	65
L. kidney,	0	4	6	9	14
Both,	1	7	8	14	12
	<hr/> 8	<hr/> 30	<hr/> 35	<hr/> 65	<hr/> 91

Cruveilhier<sup>a</sup> accounts for the more frequent mobility of the right kidney by its compression in tight lacing between the liver in front and the inferior ribs and vertebral column behind, under which circumstances it slips from its position as a plum stone from between the fingers, and he considers that it is the more yielding nature of the spleen and stomach, as occupants of the left hypochondrium, which render the left kidney more tolerant of the same degree of pressure. To this view—that tight lacing is a very constant cause of the movable kidney—it has been objected that, as a rule, the floating kidney is not so frequently met with in women who lace tightly as in those of an inferior social grade, and also that it has been several times observed in men. Yet that compression of the body may be an efficient cause in men, too, is shown by the case given by Trousseau<sup>b</sup> of the stout citizen who, as a National Guard, wore a uniform too tight for him, and thereby displaced his right kidney.

Becquet has suggested an explanation of the mobility of the kidney, which, however, applies exclusively to the female sex—namely, catamenial congestion. He believes that during the menstrual molimen the kidneys participate in the congestion of the pelvic organs, thereby accounting for much of the lumbar uneasiness and back ache experienced by many women at such times. The swollen and heavy kidney has then a tendency to overcome the feeble obstacles which retain it in its place. Upon the subsidence of the congestion, the kidney returns to its original position to make a further excursion on the next occasion, especially if its descent is facilitated by dancing, riding, too much walking, or over-long maintenance of the upright position. Trousseau<sup>c</sup> and Gueneau de Mussey<sup>d</sup> adopt this opinion of Becquet's on the pathogeny of movable kidneys. It has been shown by Troja,

<sup>a</sup> Anat. Pathol. (Ed. in 5 vols.). 1849. Tome I., p. 723.

<sup>b</sup> Clin. Med. (Syd. Soc.). Vol. V., p. 402.

<sup>c</sup> Op. cit., p. 403.

<sup>d</sup> L'Union Médicale. 1867.

Rollet, and others, that cancerous kidneys, in consequence of their size and weight, may become movable.

In this connexion, as indicative of the pathological relations between the female sexual organs and distant parts, it is well to note, in passing, the icterus of menstruation described by Ranvier,<sup>a</sup> the congestion of the tonsils often observed in a first or a painful menstruation, and called catamenial amygdalitis,<sup>b</sup> and the affections of the eye, such as the irido-chorioiditis,<sup>c</sup> in young females with dysmenorrhœa.

Roberts<sup>d</sup> believes the displacement of the kidneys to be due in many cases to repeated or protracted labours—a cause which would serve to explain the greater frequency of movable kidneys in women than in men—the alternate tension and relaxation of the abdomen and the convulsive muscular efforts accompanying parturition having obviously a tendency to loosen the attachments which hold the kidney in its place, and favour its migration, under the force of gravity, into a lower position in the abdomen. In support of this view is the fact that most of the cases happen between the ages of twenty-five and forty years, the time during which women bear children. In young people a movable kidney is rarely met with; however, Steiner, quoted by Ebstein,<sup>e</sup> found it three times—twice in girls, aged six to ten years respectively, and once in a boy of nine years. The right kidney was in each case the one affected.

Sir James Simpson,<sup>f</sup> in a lecture on the differential diagnosis of ovarian dropsy, alluding to the loose or mobile kidney, speaks in reference to its cause as follows:—"The kidney is normally bound down in its site by the peritoneum covering it on its anterior surface; but, when it enlarges from any cause—and the kidney is liable to various types of transitory hypertrophy and increase of size—it stretches and pushes its peritoneal coat before it, till at last the peritoneum envelopes it, first laterally, and then it may be even posteriorly, until at last the organ becomes pedunculated, as it were, like a polypus; or, more truly speaking, until the kidney makes for itself a more or less perfect meso-nephron, formed of a double reflection of peritoneum, on the same principle as the mesentery or mesocolon." This is probably a description of the

<sup>a</sup> *Annales de Gynécologie.* July, 1879.

<sup>b</sup> Wunderlich. *Med. Thermometry.* (Syd. Soc.). P. 102, note.

<sup>c</sup> Dehenné. *Annales de Gynecol.* Sept., 1879.

<sup>d</sup> *Syst. Med.* R. Reynolds. Vol. V., p. 644.

<sup>e</sup> Ziemssen. *Op. cit.* P. 765.

<sup>f</sup> *Med. Times and Gaz.*, 17th Dec., 1859. P. 598.

anomalous arrangement of the peritoneum, which has been occasionally found, in which it passes over the posterior instead of the anterior surface of the kidney, forming, as in the instance met with by Girard and reported by Rayer,<sup>a</sup> a meso-nephron two inches in length. In a case in which a movable kidney had been detected during life by Sir James Simpson, Dr. Priestley<sup>b</sup> found upon *post mortem* examination that "the peritoneum was reflected over the posterior surface of the kidney, giving it thus a mesentery and allowing it very considerable motion in the right side of the abdomen." In such instances, which are rare, the organ must be considered as congenitally movable.

A cause which seems to operate in many cases, and which is applicable to either sex, is a different and simpler modification in the anatomical arrangements of their surrounding parts, by which the kidneys may be rendered movable to a considerable extent—namely, the removal of the peri-renal fat in the progress of emaciating diseases, such as phthisis, or from less obvious reasons. The loose areolar tissue in which the kidneys are embedded is, by its infiltration with fatty structure, converted into a firm cushion or pad, which acts as a point of support for the single layer of peritoneum which passes in front of either organ, and acts the part of a wedge to tighten up an otherwise rather lax strap. When this fat is absorbed, the confining effect of the peritoneal layer is relaxed, its tension being lessened, and the kidney becomes free to slip in any direction except outwards, in which direction its migration is restricted by the attachments of its blood vessels. Relaxation of the abdominal parietes in *multiparæ*, as was observed before, will, under these circumstances, conduce to the mobility of the kidney. Oppolzer states, that in the cases which he had an opportunity of examining (after death from other causes) there had always been observable a deficiency of the cushion of fat about the kidney. Riolan,<sup>c</sup> two hundred years ago, pointed out the disappearance of the peri-renal fat as the cause of movable kidney, and a study of the reported cases shows how large a number of them were phthisical, or spare, thin, and anæmic, from other causes.

It is necessary to bear in mind that the misplaced kidney is not synonymous with the movable organ. The misplaced kidney refers to a congenital malposition, and, strange to say, is more common

<sup>a</sup> Op. cit. sup. P. 791.

<sup>b</sup> Med. Times and Gaz., 1857. P. 263.

<sup>c</sup> Manuel Anatomique et Pathologique. Lyon. 1682. P. 228.



on the left than the right side. It is quite true, and has been frequently noticed, that an originally movable kidney sometimes becomes fixed and stationary from adhesive inflammation of its surroundings; and this event may give rise to such disturbance that the kidney is said to be incarcerated or strangulated. Cruveilhier<sup>a</sup> has pointed out the means by which a congenital displacement can be distinguished in the cadaver from an accidental one, in the difference of the vascular arrangements under the two conditions, the former being always attended with anomalies in the number and origin of the arteries which arise in the neighbourhood of the place the kidney occupies, whereas in the movable kidneys, which have become so subsequent to birth, no anomalies in the blood vessels are met with, further than their being somewhat elongated. The terms movable and floating kidney are not to be used as corresponding to two anatomical varieties, since a kidney without a meso-nephron may give rise to all the clinical phenomena shown by one with a meso-nephron. These varieties merge by insensible degrees into one another, and the expressions, movable and floating, are only to be used as implying different degrees of one diseased state, which, according to its extent, may give rise to a slightly mobile or an extremely mobile kidney.<sup>b</sup>

When the kidney is movable the suprarenal capsule does not move with it.

In making the diagnosis of a movable kidney it is a great assistance to be fully alive to the possibility and even the probability of such an occurrence. Ebstein<sup>c</sup> observes that in most cases the diagnosis is easy, and the errors which are made are generally due to the fact that the physician does not bear in mind the likelihood of the occurrence. The tumour in question also is *movable*, which Woillez<sup>d</sup> insists on as a principal element in the diagnosis. It has, moreover, when fully accessible to palpation, the form and feel of a kidney, and can be returned to its normal location. The tendency to disappear while being handled is very characteristic of a movable kidney, and the way in which it eludes the grasp by slipping back into its right position is quite peculiar to a tumour of this nature.

The examination of a movable kidney is conducted in the

<sup>a</sup> Anat. Pathol. (5 vols.) Tom. I., p. 723.

<sup>b</sup> Rept. Com. Path. Soc., Lond.

<sup>c</sup> Ziemssen. Op. cit., p. 772.

<sup>d</sup> Diagnostic Médicale. P. 915.

following manner:—The examiner, standing at the right side of the patient (for the right kidney), glides the left hand along the margin of the lower ribs, between them and the crest of the ilium; with the right hand he slowly depresses the wall of the abdomen, and so pushes aside the intestines, and is enabled to reach the displaced kidney and get it between his hands. The upright position is more suitable for detecting it, as in the horizontal position the kidney often readily slips back into its place and of its own accord.

The diagnosis is more difficult when the kidney has become fixed in its erroneous position; it then ceases to be a movable kidney, and becomes an incarcerated one. The early history of the tumour is of use when obtainable in such a case, as in the following:—In 1861 I had occasion to see a woman, aged forty, about a tumour in the right side of her abdomen. She had had seven pregnancies. The tumour was two and a-half inches below the costal margin, two inches to the right of the umbilicus, and its lower edge touched a line joining the iliac crests. She had been twelve months aware of its existence, and it had at first been *movable* and *smaller*. She was of a nervous and desponding temperament, and could not keep from constantly feeling her tumour. It had the shape of a kidney, and pressure on it caused a peculiar and disagreeable sensation, “affecting her sight.” From its occurring in a woman, on the right side, its having been movable, and its being of reniform shape, I came to the conclusion it was a kidney originally movable and now adherent in its new position. The alteration in size which it was said to have undergone was explicable by the tendency which these kidneys have to become more and more palpable the looser they become. Dr. Hudson saw the patient several times, and always considered the tumour to be an erratic kidney.

Although it may be generally true that movable kidneys cause no annoyance to the subjects of them, yet this is not invariably the case, as may be seen in Keppler’s<sup>a</sup> very interesting analysis, in “*Langenbeck’s Archiv.*,” of 11 cases of movable kidney producing intolerable suffering and much constitutional disturbance, and rendering the patients’ lives a burden to themselves and in some cases to others. So much so was this the case in one instance that the sufferer became melancholic and committed suicide, the diagnosis of floating kidney being confirmed by the autopsy. Out

<sup>a</sup> Quoted in an able and instructive essay on “Nephrectomy,” by A. E. Barker, Assistant-Surgeon, University College Hospital, in *Med. Chir. Trans.*, Vol. LXIII.

of these 11 cases Keppler had prevailed on Martin (of Berlin) to remove the kidney in 2 (both successfully).

When a movable kidney falls inwards so as to overlies the aorta the pulsation of that vessel may be communicated to the organ; this is more apt to occur in mobility of the left kidney; and it was observed in one of Hare's<sup>a</sup> series of cases that when the woman turned upon the right side the mass (left kidney) also fell towards the median line upon the aorta, so as to receive a strong impulse from it, which immediately ceased on alteration of the position. I have been able to feel the pulsation of the renal artery in a kidney on the right side, and am confirmed in this opinion by Ebstein's<sup>b</sup> statement that twice in Frerich's clinic the pulsation of the *arteria renalis* has been felt.

The case was that of a lady, aged twenty-four, not married, who was aware of a "lump" in the right side of the abdomen for six months. I had occasion to examine the abdomen on account of *fæcal* accumulation, and, when this had been removed, her mother advised her to take the opportunity of telling me about her "lump," as to which a great mystery was kept up. The lump I found to be a tumour of renal shape, on a level with the umbilicus, in the nipple line. It moved inwards, from right to left, over a space of about two inches—not upwards or downwards. When pressed towards the right it became less distinct. I could plainly feel a pulsation at its inner margin, such as the renal artery would cause, and quite distinct from the abdominal aorta. Pressure on the tumour gave rise to a peculiar sickening sensation. The lady was a noted equestrian—"could ride any kind of horse, wild or tame," and did so, and was indifferent to the luxury of a saddle. The opinion I gave was, that she had "slipped her kidney," in consequence of the frequent succussions she was liable to. Concussion of the body, as in rough travelling, is one of the causes mentioned by Oppolzer as likely to contribute to its production.

Niemeyer<sup>c</sup> refers to one of his patients who, by moving and shaking his body, was able to get his kidney into a great variety of positions.

Further objective evidence is obtainable by percussion of the lumbar region corresponding to the absent kidney, as the percussion-sound in this situation is louder and deeper than on the other side; there is also less resistance and a slight depression over the usual

<sup>a</sup> *Med. Times and Gaz.*, 14 Jan., 1860. P. 31.

<sup>b</sup> *Ziemssen. Op. cit.* P. 771.

<sup>c</sup> *Pract. Medicine.* Vol. II., p. 49.

seat of the organ. When the tumour is replaced these phenomena in the lumbar region disappear.

Percussion of a movable kidney itself is not so dull as might be supposed, *à priori*. In the great majority of the cases numerous loops of intestine containing gas intervene between the dislocated kidney and the abdominal wall, so that the percussion-sound over the displaced kidney is tympanitic. This point, as Oppolzer<sup>a</sup> shows, is of value in distinguishing between a movable kidney on the left side and a floating spleen, as the latter lies in front of the intestines under the parietes, and gives rise to absolute dulness on percussion, which the kidney does not.

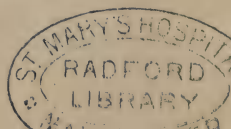
The treatment of movable kidney is not satisfactory; that is, it is difficult without maintaining the horizontal position to keep the kidney in position once it has become loose and accustomed to make excursions from its proper locality. A correct diagnosis, however, is in this case itself of therapeutic value, because it allays the fears of the patient, who perhaps imagined her condition to be hopeless. The movable kidney, although in many cases it causes no symptoms, still frequently induces such anxiety, psychical irritability, and depression of spirits, that, if there seem doubt as to its nature on the part of the physician, the patient lapses into a condition of dismal hypochondria.

The treatment found most useful has been—support by suitable abdominal bandages, avoidance of all kinds of exercise or articles of dress which would favour its descent, a tonic regimen, and the use of iron—as the subjects are frequently anæmic—and all such means as would promote the formation of fat, the loss of which seems a principal cause of the mobility.

Attempts have been made to restrain the motion in a floating kidney by passing a tape seton through the walls of the abdomen and the tumour. In a case where this was done, some hæmaturia was noticed after the operation. After three months the seton broke and came away. Four years after the kidney was removed successfully, the organ was found in the umbilical region; a deep cicatrix, about two and a half inches long, marked the track of the seton. The patient was an Irishwoman, aged thirty-five. She had been eight years affected with a pain and a tumour in the right side, and, the report says, she had undergone “the usual operation for ovarian tumour without removing the cause of her trouble.”<sup>b</sup>

<sup>a</sup> Med. Times and Gaz. 1857. Vol. II., p. 576.

<sup>b</sup> Lond. Med. Record. 1879. P. 445.





It is an ungracious thing to exhume a number of the errors in diagnosis floating kidneys have given rise to. There are, it is to be hoped, few cases to match that given by Trousseau,<sup>a</sup> of the woman who had been examined by more than ten physicians, all of whom, with one exception, were of opinion that she had a malignant tumour of the liver. The dissentient, who was a homœopath, believed it to be a tumour of the uterus. Errors in diagnosis are most material when operative proceedings are based on them, as in the case of movable kidney in a state of cancerous degeneration, which was regarded as an ovarian tumour, and the operation for its removal commenced.<sup>b</sup>

On seven occasions the extirpation of a painful floating kidney has been accomplished, and of the 7 cases 4 made good recoveries; of the 3 cases which died, 1 was a case of sarcoma in a freely movable kidney.<sup>c</sup>

The 4 cases of movable kidney which I have met with (without specially looking for it) were all in women; 3 were married and had borne children. In 3 the right kidney was affected, in 1 the left; 2 were aware of the existence of a tumour, and curiosity as to its nature led them to refer to it. In 2 there were no symptoms, and the lesion was accidentally discovered during examination of the abdomen.

The cases, in brief abstract, were as follows:—

1. Female, married, aged forty; four children; right side; tumour complained of; anomalous nervous symptoms.

2. Female, married, aged thirty-five; one child; left side; no symptoms.

3. Female, not married, aged twenty-four; right side; tumour complained of.

4. Female, married, aged forty-six; six children; right side; no symptoms.

<sup>a</sup> Clin. Med. (Syd. Soc.) Vol. V., p. 407.

<sup>b</sup> Lancet. 18th March, 1865.

<sup>c</sup> Table of the cases of Nephrectomy hitherto recorded or authenticated, appended to Barker's Essay, already alluded to.

ART. XV.—*Notes on the Treatment of Diseases of the Skin.*<sup>a</sup> By WALTER G. SMITH, M.D.; Vice-President, King and Queen's College of Physicians, Ireland; Physician and Pathologist to the Adelaide Hospital; and Physician in charge of the Department for Diseases of the Skin.

#### I. CALOMEL FUMIGATION.

EVERY practitioner recognises the advantages of prescribing mercurial compounds as local applications to syphilitic and other forms of ulceration, and their efficacy in promoting the healing of such sores has long been established. Dusting the parts with calomel is likewise often resorted to with benefit in the treatment of chancres, condylomata, and in some affections of the eye. It is evident that the finer the powder the better will it find its way into minute cracks and crevices, and the less likely will it be to cause irritation. Some years ago Mr. F. B. Kane, then Surgeon to Jervis-street Hospital, devised and figured a simple apparatus by which the fumes of sublimed calomel could be readily directed to any desired spot (*Dubl. Journ. Med. Sci.*, Nov., 1874, p. 392).

Since the publication of Mr. Kane's paper I have frequently employed calomel locally by this method, and have been struck with the rapid and satisfactory results of its operation. The tube I use is made of hard chemical glass, is ten inches in length, half an inch in diameter, and tapers towards one extremity where the bore of the tube is about a line in diameter. A bulb is blown upon the tube nearly five inches from the small end, and at the other extremity is placed a cork, through which passes a piece of glass tubing. The calomel is volatilised by a spirit lamp suspended by wire hooks below the bulb. The lamp consists of a small metal box, loosely packed with fragments of asbestos, and a roll of wire gauze with a little bit of asbestos serves as an incombustible wick. The calomel fumes are propelled by means of an india-rubber hand-ball, the tubing of which is attached to the small piece of glass tube. Since a continuous stream of air is not required, it is not necessary to make use of the double balls of Richardson's spray apparatus.

In illustration of the action of this fumigator I will adduce a few cases which seem to show that the plan is deserving of more

<sup>a</sup> Read at the Medical Society of the College of Physicians, Wednesday, April 6, 1881. [For the discussion on this paper see page 415.]

extensive trial than it has yet received. Most of the cases were treated at the Adelaide Hospital Dispensary for Diseases of the Skin.

CASE I.—A man, aged twenty-eight, presented himself 6th January, 1881, with a large circular ulcer over the inner end of the left clavicle. The sore was about two and a half inches in diameter, with glazed surface and undermined edges, and along its upper border ran an arc of firm induration about half an inch in thickness. The ulcer originated in a gummatous node which first appeared three years ago. He was put on mercury and iodide of potassium internally, and the sore was fumigated with calomel. Improvement at once set in. On January 20th the induration had disappeared, and the sore was healing fast, and after five or six fumigations at intervals of a week the ulcer was healed.

CASE II.—A man, aged twenty-one, applied on December 30th with a severe syphilitic sore throat and a rash on his skin. The entire scrotum was covered with numerous small excoriations and superficial ulcers, secreting a thin acrid fluid, causing the patient considerable suffering. The scrotum was thoroughly fumigated. Next week there was marked improvement; the fumigation was repeated, and in another week the skin of the scrotum was perfectly healed.

CASE III.—A man, aged twenty-two, presented himself on February 24th with syphilitic sores on his lower lip, and a large, irregular, unhealthy-looking ulcer situated between the third and fourth toes of the left foot. Mercury was prescribed internally, and the interdigital ulcer was fumigated with calomel. An immediate and striking improvement took place, the ulcer rapidly assumed a healthy appearance, and was dressed with citrine and resin ointment.

CASE IV.—A woman, aged thirty-seven, applied on January 6th for treatment of a large ulcerating gumma on the left shoulder. She had suffered from this sore for two years, on and off, and seven weeks ago it broke out afresh. She was given iodide of potassium, and the ulcer was fumigated. At her next visit, January 13th, the ulcer had nearly healed; the fumigation was repeated, and the ulcer rapidly closed up, citrine ointment being applied in the latter stage of its course.

CASE V.—A woman, aged twenty-three, applied for advice December 30th. A fortnight previously she felt pain in passing water. Upon examination a chancre with indurated edges was observed, involving three-fourths of the orifice of the urethra, and another chancre existed in the vagina to the left of the posterior commissure. The sores were touched with nitrate of silver on December 30th and January 3rd. On the 6th January, as the chancres, although better, were not healing rapidly, calomel fumigation was used. In four days the urethral sore was nearly well, and the vaginal ulcer was reduced to a superficial excoriation.

CASE VI.—Mr. N., aged fifty-five, consulted me on February 7th for eczematous ulceration of the left leg dependent upon varicose veins. Above the outer ankle there was a large deeply-congested patch honey-combed with numerous small ulcers. The leg was very painful, and there was considerable œdema of the foot. A wash was prescribed of equal parts of lotio plumbi and lotio nigra, with oxide of zinc in suspension. This gave immediate relief, and reduced the distressing irritation. On the 12th the ulcers were touched with nitrate of silver, and on the 16th, as healing was progressing rather slowly, I fumigated the ulcerated surface with calomel and applied Martin's bandage. Two days later he was much better, and the fumigation not only caused no pain, but materially soothed the tender and inflamed skin. The fumigation was repeated two or three times, always with a beneficial effect, and in a few days he was perfectly well.

I mention this case as an example of the utility of the fumigation method in *non-specific* indolent ulcers; and, without multiplying cases, may say that I can fully endorse Mr. Kane's recommendation of this simple plan of treatment. It is painless, even where directed on the most sensitive surfaces, is easy of application, not only to the skin, but to the tongue, tonsils, and interior of the mouth and nose, and yields, I believe, curative results exceptionally rapid and gratifying.

It appears to me that fumigation by calomel is especially useful in the same class of cases in which iodoform often proves itself so valuable, and the fine coating of freshly-sublimed calomel will sometimes succeed in cases where iodoform causes irritation or has failed to do good. Calomel, moreover, is inodorous, and it is cheap.

I have used the fumigation freely in many cases of syphilitic sores on the lips, cheeks, gums, tongue, palate, tonsils, &c., and have not met with any unpleasant result, nor have I witnessed salivation in a single instance. In a case of non-specific eczema of the septum narium and nostrils in a gentleman, whose bowels are naturally moved twice a day, one fumigation into the cavity of the nose occasioned some nausea and looseness of the bowels.

In a communication published in *The Lancet*, January 24, 1880, Dr. W. S. Byrne states that at the Metropolitan Free Hospital (to which at the time he was senior house-surgeon) this method of fumigation had been used frequently during the preceding six months, once or twice a week, according to the nature of the case, being usually sufficient for its application, and in no case had salivation in the slightest degree occurred. He gives abstracts of



two obstinate chronic cases of syphilitic throat which were rapidly cured with the help of the fumigation apparatus. In a letter recently received from Dr. Byrne he informs me that he has used the fumigator with the greatest success in some cases that had defied every other treatment. Owing to the sickness occasioned in many patients he latterly reserved this method for cases where iodide of potassium and chlorate of potassium had proved inert.

He recalls one case, that of a woman, aged forty, whose throat and palate were one hideous mass of ulceration, the result of syphilis contracted 15 years ago. Thirty-grain doses of the iodide three times daily, with gargles of chlorate of potassium, continued for a month, did not improve her condition, but when Kane's fumigator was tried the improvement was most marked. The ulcers healed after two months, the former treatment being continued.

## II. ACNE.

In speaking of the treatment of acne I have no intention of discussing the subject fully, but will content myself with submitting for discussion the line of treatment which has given me successful results in a considerable number of cases. It will be convenient at the outset to indicate the principles which guide me in the management of acne. I am satisfied that many cases of acne can be successfully treated by local measures exclusively, and unless there be plain indications I do not, as a matter of routine, prescribe constitutional remedies. In other words, I believe that many examples of acne are nothing more than local inflammations of the sebaceous follicles and their surroundings, in the same way as we frequently meet with local inflammations affecting chiefly the hair follicles, constituting one of the forms of disease included under the ambiguous term sycosis.

But I do not for a moment ignore the modifications impressed upon acne, as on most other affections, by peculiarities in the health of the patient, nor deny the relation of acne to certain constitutional conditions, especially those of the sexual organs (*e.g.*, menstrual acne) and of the gastro-intestinal tract. In such cases, in order to expect a successful result, we must endeavour by appropriate means to correct the perverted functions.

From a practical point of view cases of acne fall into three groups:—

1. Those in which retention of sebum (comedo) is a prominent feature.

2. Those in which an inflammatory process predominates.
3. Those in which vascular congestion requires to be specially dealt with.

My remarks will refer chiefly to the inflammatory group; and, for illustration, we will take as a common type of case one presenting a number of pimples, some finely papular, some indolently tubercular, and others suppurating at the apex.

If there be much pus formation the first step should be to gently but freely open with a small and very sharp knife the little acne abscesses. Any troublesome bleeding is readily checked by stuffing the cavity with a pellet of absorbent cotton. With the sluggish copper-coloured tubercles our object is to promote absorption of the products of inflammation, and to stimulate to healthy action without producing a caustic effect, lest scarring should result. For this purpose I used to employ the acid nitrate of mercury, but I have abandoned it in favour of carbolic acid. This agent possesses several advantages. It is an excellent stimulant and pus-destroyer without being powerfully caustic. It tends to numb the part to which it is applied, in virtue of its local anæsthetic quality, and hence it causes less pain than the mercurial salt, and when carefully used it will frequently effect rapid absorption of the unsightly acne pimples without leaving a permanent mark. I usually apply it by means of a glass rod or stick with rounded point dipped into the liquefied acid, and have beside me a piece of blotting paper to sop up any accidental excess of the acid that may fall on the skin. It is important not to overdo it, and immediately after the application it is advisable to cover each carbolised spot with a film of flexible collodion. This not only protects from atmospheric irritation, but also, as is well known, forms a colloid compound with the carbolic acid, and so minimises its irritant action. The patient is directed not to wash off or forcibly remove this varnish (which scarcely shows on the face), and to apply a suitable lotion or ointment twice or thrice a day. The number of repetitions of the carbolic application depends upon the nature of the case, but even in aggravated cases two or three applications will sometimes suffice to remove the most disfiguring portion of the disease.

To expedite the cure it is often serviceable to dust the face at night with precipitated sulphur, by means of a puff, washing it off in the morning with the lotion. If the skin be irritable or inflamed, I do not know anything that proves so soothing to the skin and grateful to the patient as washing the face with rice milk, prepared

by boiling, say, a teaspoonful of ground rice in half a pint of new milk. Patients will derive benefit from this emollient, whom experience has taught that even bran or oatmeal tea are useless, or cause irritation.

Acne on the dorsal region both needs and tolerates more energetic treatment than facial acne. Here we cannot begin better than by ordering diligent frictions with soft soap, or, what I have found to be a cheap and capital substitute, Hudson's Extract of Soap.

In all cases it is understood that comedones are to be extracted by suitable means—*e.g.*, pressure with a watch-key (the edges rounded off), as each comedo may develop into an acne pimple. Steaming the face previously facilitates their removal.

No doubt a few cases will prove unexpectedly obdurate, and relapses will disappoint our hopes; but, even when the affection has persisted in an aggravated form for many years, we need not despair of a complete and lasting cure, in evidence of which I will adduce two cases :—

CASE I.—Miss — was referred to me for treatment by Dr. C. Fitzgerald, 19th May, 1879. For nearly *twenty years* she had been subject to acnè on the face, neck, and shoulders, and about two months before I saw her a diffuse (eczematous?) inflammation spread over the face. She presented herself with a dusky red eruption on the forehead, cheeks, and chin, the skin being thickened and leathery, scaly, but not oozing, and the itching was not very annoying. Numerous acne pimples and tubercles were scattered over these parts, and also about the shoulders and interscapular region. A soothing lotion (linim. calcis  $\mathfrak{z}$  v., glyc. boracis  $\mathfrak{z}$  i., zinci oxidi  $\mathfrak{z}$  ij., spir. cajup.  $\mathfrak{z}$  i ss.) was first prescribed. This at once gave relief, and at her next visit the carbolic treatment was commenced. Under this treatment the indolent acne tubercles speedily receded, and she was directed to use an ointment (vaselin  $\mathfrak{z}$  iv., hydrarg. ammon.  $\mathfrak{z}$  ss., sulph. præcip. gr. 20, ol. amygd. am.  $\mathfrak{m}$  ij.). A temporary aggravation occurred in the middle of June, but soon passed off. A lotion was then tried (sapo mollis. spir. rectific. āā  $\mathfrak{z}$  i., glyc. ac. carb.  $\mathfrak{z}$  ij., sulph. præcip.  $\mathfrak{z}$  ss., ol. amygd. am.  $\mathfrak{m}$  iij.), but this proved irritating. She resumed the lime liniment, and was ordered to dust the face at night with a mixture of equal parts of precipitated sulphur and oxide of zinc. Early in July she returned home, having been under treatment for seven weeks. All traces of the eczematous inflammation had disappeared, no new pimples developed, and the skin of her face was soft and smooth, and altogether in a better state than it had been since the eruption first appeared. By the end of September her face and shoulders

were perfectly well, and the skin soft and natural looking, although finely pitted with the cicatrices of old pustules. In a letter dated 15th October, 1879, she writes thus:—"I must tell you my face has been in a most delightfully comfortable state, and giving up all treatment has had no ill effect. You have made me a happier and, I hope, a better woman by taking away a cause of constant irritation."

Quite lately I have ascertained that the cure has been a lasting one, and that no relapse has occurred. No internal medicine was prescribed.

CASE II.—On the 3rd June, 1879, the Rev. Mr. S., a Catholic clergyman, was sent to me by the late Dr. Rainsford, under whose care he had been for ulcers on the cornea. He was a healthy, sanguine man, aged thirty-six years, accustomed to hard study, and a distinguished preacher. He was a total abstainer, but his face was greatly disfigured, and his nose was a bright fiery red. The eruption commenced when he was about twenty-two years of age, and had persisted ever since. The face was covered with numerous small acne pimples, some of them suppurating at the apex, and latterly the eruption had begun to creep up on the scalp. His appetite was good and his bowels regular. The acne spots were touched with carbolic acid and collodion, and an ointment prescribed (vaselin. ℥ iv., hydrarg. ammon. gr. 20, hydrarg. oxid. flavi, gr. 10, ol. amygd. amar. ℥ iij.). No improvement being apparent after a few days, the following lotion was ordered:—Liq. calcis sacch. ℥ iii ss., zinci oxidi ℥ ss., zinci carb. ℥ ss., glyc. acid. carbol. ℥ ss. Neither did this prove of much avail, and on the 11th June (*i.e.*, his fifth visit) I prescribed a more stimulating application—viz., sapo. mollis, spir. rectific. āā ℥ ij., ac. carbol. ℥ 30, sulph. præcip. ℥ i., ol. amygd. amar. ℥ iv. He shortly left Dublin, and on the 17th September called on me to report himself *quite well*, through continued use of the soap lotion, with the exception of a few specks on his head. He was recommended to dust the skin with a powder (bism. subnitr., sulph. præcip. āā ℥ ss., camphoræ, grs. 5). On the 15th October, 1879, he wrote to thank me for the cure that had been effected. He said—"As far as I can remember, my face, especially the forehead and cheeks, had been covered with a red eruption for the space of some thirteen or fourteen years. I had consulted several medical men, and certainly men of no ordinary standing. If ever I got relief it was but transitory. I came to you with little faith—a disposition unfavourable for the doctor. However, you have so far succeeded that my face is now quite clear. I never thought to have a smooth forehead again; now it is as smooth as anybody's. All the redness also has disappeared, and I have a delicate colour such as ladies would prize."



ART. XVI.—*Diphtheria in Londonderry.*<sup>a</sup> By WALTER BERNARD, F.K.Q.C.P.I.

IN April, 1880, I read before the Society a paper on the “Symptoms and Treatment of Diphtheria.” There are few diseases about which so many mistakes in diagnosis are made. We read and hear of marvellous success by simple treatment in so-called diphtheria. I know of one practitioner who enjoys an extensive practice, and who tells me that quinine never fails in “diphtheria.”

Dr. James Little says that diphtheria is rare in Dublin, and does not rely on the returns of the Registrar-General giving the number of deaths in Dublin from this disease. As mistakes are so frequently made by practitioners, it is difficult or even impossible to be sure that true diphtheria is as common in a town as reported. The occurrence of diphtheritic paralysis is an *experimentum crucis* for the existence of diphtheria. The number of cases may be estimated approximately if for every case of paralysis we reckon *at least* 12 cases of diphtheria. That diphtheria occurs in Londonderry I have no doubt whatever, and I have reason to believe that it is commoner here than in Dublin.

In my practice, since I wrote my first paper, it has been my lot to treat many cases of this disease, and I publish here two cases of diphtheritic paralysis which have been treated by me during the last five months.

CASE I.—Master J., aged nine years, was brought to me at the end of November, 1880. His mother complained that his sight was failing from overwork for an approaching examination. The boy looked pale and weakly. I had him, as well as the following case, examined by Dr. Donaldson with the ophthalmoscope and with lenses, and had the advantage of his opinion, as he has devoted much attention to the eye. At first asthenopia, due to hypermetropia, was suspected; but, on questioning the boy, it was found that he spoke through his nose. On further inquiry, it was discovered that he had not recovered his strength after an attack of “bad sore throat,” which had been treated by domestic remedies. Fluids sometimes regurgitated through the nose. He could not read the largest print, but could see well at a distance. The pupils acted fairly well to light. With a convex glass,  $\frac{1}{10}$ , he could read without difficulty. He was put on tonics and nutritious diet, and eserine was instilled into the eyes. Electricity was not used.<sup>b</sup> In four

<sup>a</sup> Read before the Medical Society of the King and Queen’s College of Physicians in Ireland, Wednesday, April 6, 1881. [For the discussion on this paper see p. 417.]

<sup>b</sup> Since writing the above I have ascertained from his father that he applied electricity and used hot air baths on his own responsibility.

weeks he was able to read, and his voice became natural, and he gradually recovered strength. In the same house, and in the neighbourhood in which the boy lived, it was ascertained that many cases of "bad sore throat" occurred about the same time.

This case presents two special points of interest:—1. Although the family in which the disease occurred were in comfortable circumstances, the case was unattended by any medical man until it was found that the child could no longer read; 2. If the real cause of the inability to read had not been detected, the family would have been obliged to go to the trouble and expense of consulting an oculist in the metropolis or elsewhere.

CASE II.—Mrs. M., aged twenty years, in February, 1881, was treated by me for pharyngeal diphtheria of a very severe type, the membrane having reformed on the pharynx and soft palate two or three times. The malady was contracted during her attendance on her stepchildren. In three days after the disappearance of the membrane an alteration in her voice was first noticed. In a few more days fluid regurgitated through her nose, and she had some difficulty in swallowing solids. Her pronunciation of the letters "b" and "p" was much improved when her nostrils were closed. The soft palate moved during inspiration and expiration, but when touched with a quill pen showed little signs of sensibility. When her attention was drawn to her sight she noticed that she could not read at so close a distance as formerly. Gradually her near point receded until she could not read the largest print. Vision at a distance was excellent; pupils acted well to light. She could read with  $+ \frac{1}{11}$  glasses. The nasal intonation and the accommodation power varied much, according to Dr. Donaldson's examination. She was put on the same treatment as the first case, and, as she complained much of not being able to read, convex spectacles were allowed. She is still under treatment, and I anticipate a good recovery.

These two cases well illustrate the observation made by Dr. H. Jackson that diphtheritic paralysis differs from all other kinds of paralysis with which we are acquainted, in seeming to have a great preference for those branches of nerves which pass through the ganglia of the sympathetic. Only the branches of the third and facial which pass through the lenticular and Meckel's ganglia are paralysed. Hearing was not affected as far as could be ascertained in either of these cases, nor was there any paralytic affection of the extremities.

To study well paralysis of the soft palate, the practitioner ought to be very familiar with the healthy movements of the soft palate

during inspiration and expiration, and also during the pronunciation of certain letters. He should also know how sensitive the palate is in the normal state when touched by a foreign body.

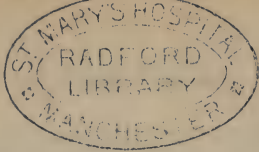
Another case occurred quite lately in my practice, the diagnosis of which is also unquestionable. Drs. White, M'Cullagh, and Donaldson concurred in the diagnosis.

CASE III.—William M., aged four years and nine months (step-child of Mrs. M., whose case I have recorded above), accidentally received a cut on the right eyebrow from a fall while diphtheria was prevalent in the house. This occurred on the 10th of March, 1881. His face soon after the injury became swollen and erysipelatous, and there was much œdema of the lids of the right eye. On the 15th of March a distinct membrane formed on the wound and neighbouring skin. The pharynx was found to be covered with membrane on the 16th. The first sound of the heart became indistinct, and intense exhaustion supervened. Urine was highly albuminous. On the 19th of March he died.

These three cases were unmistakable cases of diphtheria. The occurrence of diphtheria in particular localities is an interesting and important question. If we could attain to a more accurate knowledge on this matter, some generalisation with regard to ætiology might perhaps be arrived at.

#### LOCAL ANÆSTHESIA OF THE LARYNX.

To avoid the disagreeable effects of the local anæsthetics hitherto employed in the larynx, Rossbach attempted to secure anæsthesia of the throat and larynx by the internal administration of large doses of bromide of potassium, and with good results. But the loss of energy and the helplessness of the patient thus produced essentially interfere with the success of operative procedures. The author then endeavoured to induce anæsthesia by interruption of the nerve force in sensitive nerves of the larynx. The trunk of the sensitive branch of the superior laryngeal nerve, at the spot where it penetrates the thyro-hyoid membrane below the button-shaped end of the great cornu of the hyoid bone, lies so superficially that it may be here completely anæsthetised by hypodermic injections of about gr.  $\frac{1}{12}$ th of morphia (0.005) on each side. Still simpler and equally effective is the application of cold at these places. The cold is best brought to bear upon the spots by means of Richardson's atomisers which are so altered by Rossbach that the stream plays through two fine tubes directly upon the nerve trunks. Complete anæsthesia occurs after one or two minutes application of the atomiser.—*Wiener Medical Press*, 1880, No. 30; and *Indiana Med. Rep.*



## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*Carpenter's Principles of Human Physiology.* Edited by HENRY POWER, M.B., Lond.; F.R.C.S. Ninth Edition. London: Churchill. 1881. 8vo, pp. 1,097.

THE ninth edition of a work which has gone through eight editions with undiminished popularity, needs but little notice from a reviewer. In its present form Dr. Carpenter's Physiology is for the most part the work of the editor, who, with indefatigable industry and the exercise of no little judgment and care, keeps the book well abreast of the rapidly advancing wave of physiological knowledge, and that without materially increasing the size of the volume. The arrangement of the matter is still the same as in the earlier editions; but this will soon, we think, require some alteration. The sections on Pathology have been much condensed, and the work has in every part undergone complete revision. If we compare the edition of 1881 with the sixth edition, that of 1864, and the first, which was edited by Mr. Power, we find an increase of only 151 pages; and when we consider that the Physiology of 1881 is represented as well as that of 1864 was, we shall not be much astray in concluding that the book has been almost re-written by its editor.

The present edition possesses an index extending to 60 closely-printed pages, and of rare fulness and completeness. This greatly enhances the value of a book whose use is largely that of a work of reference.

Mr. Power, in his Preface, rightly points out that physiology is not to be learned from books, but by practical work in the laboratory, and while regretting, as every intelligent person does, the mistaken legislation which has almost destroyed physiological investigation in this country, he indicates those paths of biological research which are still open to Englishmen—histology, embryology, physiological chemistry—paths which are being so ably and zealously followed up, as to show that there is no want of aptitude



for physiological study among us, and that if our opportunities for work were better, the results of our labours would bear comparison with that of our more fortunate continental brethren. But at present we must go abroad for our knowledge in experimental physiology—the only true physiology; and we can confidently recommend the work of Dr. Carpenter and Mr. Power as a source from which the actual state of such knowledge may be learned.

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*Experimental Chemistry for Junior Students.* By J. EMERSON REYNOLDS, M.D., F.R.S.; Professor of Chemistry, University of Dublin. Part I.—Introductory. London: Longmans, Green and Co. 1881. Pp. 144.

THIS excellent class-book, although complete in itself, constitutes only the introductory or first part of a work on chemistry on which Professor Emerson Reynolds is engaged. In it the author has followed the plan he originated in his “Lectures on Experimental Chemistry,” and which has received such well-merited commendation from competent judges. This plan, elaborated and extended in the present work, essentially consists in an application of the experimental method of inquiry to the study of Chemistry. By a series of well-devised and connected experiments, freely illustrated by woodcuts, and ranging from the temporary physical change shown to occur in platinum wire when made red-hot and subsequently allowed to cool, to experiments demonstrating the oxidising power of peroxide of hydrogen, the student is gradually led to acquire a knowledge of the fundamental laws and facts of chemistry by the exercise of his observation and reason. And this, too, in a manner that tends not only to make the study itself more interesting and attractive, but which also cannot fail to prove an excellent mental training. Thus, for example, the law of constant composition and the law of definite proportions, often so perplexing to beginners, are deduced from actual experiment, the steps of the operation in each case being fully and clearly explained. Other first principles of the science—too frequently made its dry-bones—are expounded in a similar pleasing manner; and the important elements, hydrogen, and oxygen, and their compounds, are treated of in full detail. It is a work which no student of chemistry should be without.

## WORKS ON MATERIA MEDICA.

1. *Metric Record of Prescription and Medical Observation*. By Drs. E. & E. C. SEGUIN. London: H. K. Lewis. 1880.

MESSRS. E. & E. C. Seguin have issued under the above title a book of prescription forms, intended to facilitate the use of the metric system in medicine. It does not appear to us to be conveniently drawn up, or to be arranged in a form which will commend it to practitioners.

2. *A Note-Book of Solubilities, arranged chiefly for the use of Prescribers and Dispensers*. By JOHN EAGLE. London: H. K. Lewis. 1880.

RIDICULOUS and sometimes serious mistakes in prescribing are frequently made by medical men through ignorance of the approximate solubilities of drugs in water or other solvents. Mr. Eagle's synopsis of the solubilities of the more common chemical preparations at present in use is an appropriate and useful companion to the prescriber and the pharmacist. The drugs are simply enumerated in alphabetical order, and while in some cases the solubility in water alone is given, in most instances the solubility in various menstrua is indicated, *e.g.* :—

Acid Carbolic,	{	1 in 20, cold water.
		5 in 1, alcohol.
		3 in 1, chloroform.
		4 in 1, ether.
		1 in 1, glycerin.

3. *Aids to Materia Medica and Therapeutics*. Part II. By DR. ARMAND SEMPLE. Baillière, Tindall & Cox. 1880.

WE cannot recommend books of this class, which have of late multiplied to legion. The same author has published a series of so-called "Aids" to various branches of medical study, and we regret to see that there is a continued demand for such poor compilations.

4. *Nitro-Glycerine as a remedy for Angina Pectoris*. By W. MURRELL, M.D. Reprinted from *The Lancet*. 1879.

DR. MURRELL reports some interesting investigations upon the physiological action of this potent drug, and adduces several cases of angina pectoris treated by it with encouraging success. The

dose administered to commence with was one minim of a one per cent. solution of nitro-glycerine in alcohol, three times a day, gradually increased up to five or even fifteen minims.

5. *Pharmacology and Therapeutics ; or, Medicine Past and Present.*

By T. LAUDER BRUNTON, M.D., F.R.S. London : Macmillan and Co. 1880. Pp. 212.

DR. BRUNTON is acknowledged to be one of the foremost among the modern workers in scientific therapeutics, and he has made some important contributions to our knowledge. This volume consists of the Goulstonian Lectures, delivered in 1877 ; and the object of the lectures is to show how the progress of therapeutics is aided by an exact knowledge of the action of drugs obtained by experiment. The study of pharmacology, or the investigation of the action of drugs upon the body, apart from their use in disease, appears to have had its origin in men's desire to discover poisons by which the lives of their enemies might be destroyed, or antidotes whereby their own might be saved. To Magendie belongs the credit not only of having laid the foundation-stone of modern pharmacology, but also of having left behind him works which may still serve as a model for investigators. Dr. Brunton illustrates, in a very lucid and instructive way, the methods of pharmacological research, by three examples—viz., the investigation of the action of upas, *i.e.*, strychnia (Magendie) ; of curare (Claude Bernard) ; and of casca bark (Lauder Brunton and Pye), an ordeal poison of Western Africa.

He then proceeds to show how pathology, as the connecting link between pharmacology and symptomatology, enables us to apply our knowledge practically ; and the last three chapters of the book are devoted to an exposition of some of the gains to therapeutics already obtained by improved methods of research. These latter chapters are especially interesting, and we commend them to our readers as well worthy of study.

*RECENT WORKS ON VENEREAL DISEASES.*

1. *The Venereal Diseases, including Stricture of the Male Urethra.*

By E. L. KEYES, A.M., M.D.

THIS book, which is published by William Wood & Co., of New York, is a valuable addition to the literature of the profession. The author adopts, as the title of his work shows, the doctrine of the

plurality of venereal diseases, and in his descriptions of the various forms of sores he has succeeded in pointing out their essential characters with a graphic accuracy which cannot fail to be an aid and protection against error in diagnosis to those who have not had an opportunity of acquiring the knowledge of these affections by clinical observation. As a book of reference to the general practitioner this work is likely to prove most useful; while it points out with clearness of description the distinctive differences of the various phases of venereal sores, it avoids the elaboration of theory and diversity of opinions which, coming from different authorities of known weight, are apt to lead to doubt and uncertainty.

The opportunity of acquiring a practical knowledge of venereal diseases to any great extent is withheld in this city not only from students but from qualified practitioners by the rules of the Government Lock Hospital, by which they are prohibited from visiting the hospital for the purpose of clinical instruction. As long as this prohibition exists, a large proportion of young physicians and surgeons must of necessity commence their careers as practitioners in this country with a very limited knowledge of venereal diseases, particularly as affecting women. To these Dr. Keyes' work will supply, as far as a book can, the want of that practical experience which has been placed beyond their reach by the senseless system of exclusion enforced in the Government Institution for the treatment of venereal diseases among prostitutes in Dublin.

The chapters upon secondary syphilis, and the more remote consequences of this disease, are replete with sound practical information, evidently the harvest of an intelligent, well-informed brain, gathered from a wide field of observation.

The author includes stricture of the urethra among venereal diseases, and devotes a great portion of his work to this affection. We will not discuss the propriety of calling this condition a venereal disease, intimately connected though it be with both gonorrhœa and chancre. Suffice it to say, that the chapters referring to it, like the rest of the book, bear evidence of much labour and careful thought expended upon the study of this obstinate affection. Numerous and some novel instruments are described, and woodcuts given of them, for overcoming, curing, or treating stricture, the advantages of which can only be decided by the general verdict of the profession after a fair trial. The



urethrotome of Otis, to which he devotes considerable space, appears more complicated and to possess no advantage over that of Civiale, which is used with such ease and success by most surgeons in this country. On the whole, this is a good text-book to aid the general practitioner in the diagnosis and treatment of venereal diseases, and, as such, we can recommend it as one worthy of a place in the library of any practising surgeon.

2. *Lectures on Syphilis, delivered at the Harveian Society, Dec., 1876.* By JAMES R. LANE, F.R.C.S.

THE second edition of these lectures, which has recently been published, is little more than a re-publication of the first. To those who are not familiar with them they will be both interesting and instructive. They contain a precise *résumé* of the conflicting theories and opinions on the subject of venereal poisons, up to 1876, together with a history of the attempt and failure to introduce the doctrine of syphilisation.

The principal addition which the author has made to the present volume is a powerful and convincing advocacy of legislative measures for the prevention of venereal diseases. He says, "Our principal seaport towns are hot-beds of syphilitic contagion," and to none does this observation apply more truly than to the City of Dublin; and the main centre from which this direful plague radiates is the Government Lock Hospital. This is what he terms a "Voluntary Lock Hospital;" and the truth of his statement, that such institutions are useless, is well exemplified in this instance, for the appalling death-rate of Dublin is kept up to its standard of nearly 40 per 1,000, to a great extent, by the number of infants who fall victims to hereditary syphilis. Surely the time is not far distant when some of the clauses of the Contagious Diseases Act will be extended to this city, so that this source of the high death-rate may be somewhat mitigated.

*Bovine Tuberculosis in Man: an account of the Pathology of Suspected Cases.* By CHARLES CREIGHTON, M.D. London: Macmillan and Co. 8vo, pp. 119. With six plates.

THERE are few subjects which at the present time occupy to a greater degree the thoughts of pathologists than the origin of tuberculosis. This affection, in its more acute manifestations, so closely resembles the infective diseases, that the theory of a virus,

whether generated in the interior of the body from caseous matter or derived from without, is almost irresistible. As is known, this view has been recently put forward by Cohnheim with great force, and Klebs professes to have discovered a micrococcus, by whose agency the infection is brought about. In the work before us, Dr. Creighton adduces proof of an anatomical kind in support of the doctrine that, at all events, in many cases the tuberculosis which affects the human subject is identical with the disease which is so common in cows and oxen, and which has received among many other names that of the Pearl Disease, or *Perlsucht*, in consequence of rounded excrescences which grow on the surface of the serous membranes. This disease has been communicated to the calf, lamb, goat, pig, and rabbit, by feeding either with the milk of the diseased animal or with the pearl bodies themselves; and Dr. Creighton contends that there is strong evidence, from the anatomical similarity between the disease in the cow and that often observed in man, that the infection is very commonly communicated to the human subject by the milk of cows affected with *Perlsucht*, or, as he calls it, bovine tuberculosis. The great importance of such a question does not need to be pointed out. Twelve cases are recorded, which have all been observed recently at the hospital at Cambridge, and in which the appearances, both to the naked eye and on microscopic examination, so closely resembled those seen in cows affected with *Perlsucht*, as to convince Dr. Creighton of the identity of the affection in the two cases. Of course actual experiment to prove the transmission of the disease from cattle to man is impossible; but, if it is considered how largely cows' milk enters into the dietary of everyone, it will be seen that, if such transmission be possible, it must occur very frequently—and this is what is contended for by Dr. Creighton. Milk is now recognised as a means of carrying the virus of disease, and epidemics of typhoid fever have in many cases been traced to milk contamination. But in all cases it is believed that this contamination is due to something added to the milk after it has been taken from the cow, and this something is always sewage of one kind or other, which is, in the minds of most sanitarians, the origin of all evil. Dr. Creighton starts the view that many of these supposed attacks of typhoid fever are in reality outbreaks of tuberculosis, and that the milk was contaminated not by adulteration but owing to its having been secreted by tuberculous cows. He quotes a remarkable case, recorded by Dr. Spencer of Bristol, in which an epidemic of fever occurred in a school. Of

twenty or twenty-five boys attacked, four died, and all of these were found to be affected by general tuberculosis. Dr. Spencer explains the matter by supposing that all the boys were scrofulous, and that the fever (supposed typhoid) acted as a connecting link between scrofula and tuberculosis; and of course the Medical Officer of Health found leaky sewers, just as he would have found them in any other house if he had made up his mind to discover them. Dr. Creighton looks on the epidemic as one of tuberculosis, and seems to hold very unorthodox views as to sewer gas. He says, "The account of defective drains will remind us of many sanitary reports that we have read before. There are our old enemies—the leakage of sewage and the escape of sewer gas—entering into the tale, like the cock and the bull of romance. Leaking sewage and currents of sewer gas are no doubt unwholesome, and sometimes even dangerous things, but had they anything to do with the epidemic in the particular industrial school?" He thinks not, and we confess we agree with him. We think far too much is laid to the charge of imperfect drainage, and that the real causes of disease are often overlooked, because it is supposed that where an untrapped drain or a leaky sewer-pipe is discovered quite enough is found to account for everything.

We have not attempted in this notice to reproduce in detail the evidence on which Dr. Creighton founds his theory. Our space would not allow of our doing this; but we recommend the book to all our readers as a contribution to pathology of very unusual value and deserving of the most serious consideration.

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*The Structure of the Vessels of the Nervous Centers in Health, and their Changes in Disease.* By THEODORE DEECKE. Pp. 82.

THIS paper is a reprint from *The American Journal of Insanity*, in which periodical it appeared in parts, between July, 1877, and January, 1881. Its title seems a misnomer, as the article deals chiefly with physiological considerations and arguments of a speculative character which do not admit of analysis. In the first part, however, some original views are put forward as to the structure of the vessels of the nerve-centres, and of which the following is a brief abstract:—The larger arteries have six or, perhaps, seven coats. The endothelium consists of two layers—an inner, formed of low, cylindrical cells with round nuclei, and sometimes resembling goblet cells, and an outer layer formed of

long and narrow pavement epithelia, with oblong nuclei. The smaller arteries which enter the brain substance possess only the second layer. Next we have the *membrana fenestrata*, formed of an "irregular reticulated network," apparently formed of elastic tissue containing neither cells nor nuclei. External to this is a peculiar layer, "a uniform, tendon-like membrane, which resembles in transverse section a solid ring;" does not stain in carmine, is of a shining appearance and elastic, although not containing elastic fibres. Outside this very peculiar structure we have the muscular coat, external to which is the sixth layer, formed of separate large bundles of elastic tissue; and, lastly, we have the *adventitia*, which consists of connective tissue, there being no perivascular lymphatic space around the arteries.

The endothelium of the veins is similar to that of the arteries. Outside the endothelium is a layer formed of elastic fibres, and outside this a perivascular lymphatic sheath lined by long and broad pavement epithelium. This sheath is continued on the larger capillaries, while the smaller are directly embedded in the nervous tissue itself without the intervention of any such sheath.

The spaces in the connective tissue *adventitia* of the arteries are believed to communicate with the subarachnoid spaces, and to contain fluid continuous with the cerebro-spinal fluid, while the perivascular spaces around the veins form part of the lymphatic system. The author seems not to be acquainted with the work of Key and Retzius on the "*Anatomy of the Nervous and Connective Tissues.*"

A somewhat detailed account is given of the distribution of the small arteries and capillaries in the different parts of the brain and spinal cord, but which does not differ sufficiently from other descriptions to call for special notice here.

As to the pathological changes in the vessels we do not find very much information. The author tells us he has never dissected an adult brain, either of a healthy person or of one who had suffered from brain disease, without finding in one or other convolution more or less evidences of gross alteration in the capillary system:—"These are represented by the presence of the remnants of capillary vessels which, at one time or other by causes unknown, must have been cut off from the general circulation. They are found preserved, embedded in the cerebral tissues, forming rigid shrubs of larger diameter than the living normal capillary, with thickened longitudinally striated walls. At the one end they show commonly



a kind of knobby dilatation, which at one point runs out into a long filament, probably the collapsed sheath of the unaltered portion of a capillary vessel. Frequently, but not always, they exhibit a slightly glassy appearance, and offer a great resisting power to the influence of acids and alkalies, as well as to ether, chloroform, and alcohol. They are of a cartilaginous consistence, and I have never observed any alteration of tissue in their immediate surroundings. Aside from a little granular material, occasionally met with in the tubes, they seem to be filled with a uniform, slightly-refracting substance; and the only theory in regard to their origin which I can suggest is that they are, as indicated in the foregoing, the remnants of occluded, dilated, and finally degenerated capillary vessels, which have become infiltrated with an inorganic compound in combination with an albuminoid, which is indifferent to the chemical processes occurring in those parts of the living organism." This morbid condition of the vessels, which is called the *callous* degeneration of the capillaries, is most common in the cortex cerebri, occasionally seen in the grey central ganglia and pia mater, while it is rarely if ever met with in the white matter of the cerebrum, or in the pons, medulla oblongata, or spinal cord.

We must refer to the original for the author's speculations as to the condition of the brain in sleep, intoxication, and insanity, as well as for the morbid changes met with in the latter condition, among the most remarkable of which are capillary emboli and the occurrence of large, round, or oval, feebly-refracting transparent masses, each enclosing a white corpuscle in its interior. They are supposed to indicate the existence of a diffuse inflammatory process. Two cases of rather acute insanity are recorded in which these bodies were found at the *post mortem* examination.

#### TEST FOR SUGAR IN THE URINE.

DR. L. S. OPPENHEIMER (*Louisville Medical News*) states that one drachm of a mixture of cupr. sulph. cryst., gr. 1; glycerin purif., ʒj.—M., will reduce one grain of grape-sugar in a caustic alkali. Two or three drops of the mixture are put in a test-tube and ʒss. liq. potas. added; the whole is then boiled, a few drops of urine added, and the whole boiled again. If sugar be present it will be thrown down as the brownish-yellow cuprous oxide. The test is surer than Trommer's, it can be used to determine the quantity of sugar, albumen does not interfere with the reaction, and the mixture will keep indefinitely.—*N. Y. Med. Record*, Jan., 1881.

# PART III.

## MEDICAL MISCELLANY.

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*Reports, Transactions, and Scientific Intelligence.*

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### TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

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SESSION 1880-81.

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GEORGE JOHNSTON, M.D., President.

ALEXANDER NIXON MONTGOMERY, M.K.Q.C.P., Honorary Secretary.

*Wednesday, April 6, 1881.*

The Vice-President, DR. WALTER G. SMITH, in the Chair.

DR. FITZPATRICK having taken the chair,

The VICE-PRESIDENT read a paper entitled "Notes on the Treatment of Diseases of the Skin." [It will be found at p. 395.]

The CHAIRMAN (Dr. Fitzpatrick) said acne was a most difficult skin disease to deal with. He had come to the conclusion that it is a disease more or less of a constitutional nature, and that it is a semi-strumous affection. He had noticed that generally one parent (the mother) of the child was healthy and the father strumous. In the early stages, where the patients were about the age of puberty, and in which the disease often passes off without leaving any subsequent trace, local treatment alone would not be proper, particularly local treatment of a repressive character. He was consulted by a very beautiful girl who had this disease, and he recommended her mother not to allow her to use local applications of an astringent character. The young lady was dissatisfied and went to some one else, and astringent applications were used. He was called in to see her some months afterwards, and found her labouring under phthisis, of which she died. Therefore it is only when Dr. Smith speaks of cases of fourteen years' duration that the treatment he recommends may be worthy of consideration.

DR. FINNY said his opinion went very much with that expressed by Dr. Smith. He hardly ever employed constitutional treatment. The only exceptions have been where intestinal disease or torpidity of the

liver has been a concomitant—where the patient has had a coated tongue and constipation, and the functions of the glands have been slowly performed. In those cases great benefit was derived from the use of common saline aperients, such as Hunyadi János or Friedrichshall water. His treatment has been local applications of the acid nitrate of mercury carefully applied—a treatment which has answered so well that he never has had reason to make any change; and also an ointment composed of iodide of sulphur (diluted according to the delicacy of the patient's skin), and as the case improves and induration disappears, dusting the face with precipitated sulphur. He had hoped that Dr. Smith would have referred to the troublesome acne rash which follows the administration of bromide of potassium, and would have mentioned the most appropriate treatment. In cases of acne due to this cause he had found the internal administration of arsenic and cod-liver oil useful, together with local applications of precipitated sulphur, spirits of camphor, and rose-water, twice a day. There is a third form of the disease to which Dr. Smith did not make much reference, and in which there are great clusters of congested vessels springing from the larger tuberculated acne spots. In such cases he divided the most prominent veins, and allowed a little bleeding to go on to empty the vessels. As soon as the spot was thus treated a local stimulant application was sufficient to complete the cure.

DR. HENRY KENNEDY said that in connexion with some of the cases which Dr. Smith had detailed, he thought that some credit is due to the constitutional treatment that was adopted. Where iodide of potassium was employed with the fumigations it is clear that the two worked together; so that the cases must be interpreted as illustrating constitutional as well as local treatment.

DR. R. J. HARVEY remarked that the patient in one of Dr. Smith's acne cases was for a long time known to him—not professionally, but socially. He knew that the lady had been for a long time under treatment by various physicians, without having derived any benefit from them; he thought it only fair to bear his testimony to the efficacy of the treatment which Dr. Smith had adopted. He considered Mr. Francis Kane's fumigator an exceedingly valuable instrument. He did not think that either Dr. Smith or Mr. Kane meant to suggest that treatment by the employment of it was not likely to be very greatly assisted by the use of other remedies at the same time.

The VICE-PRESIDENT (in reply) said he was under the impression that he had conveyed that in common with every physician and surgeon he employed constitutional remedies, and relied mainly on them in his treatment of syphilitic sores. All that can be claimed for the fumigation method is that it is a valuable local adjunct to constitutional treatment, and offers some advantages which are not gained by the ordinary methods in vogue. He might mention that another method

which he had suggested to his colleagues was the application of calomel to the conjunctiva of the eye. The stream of air from the instrument is so gentle that the instrument might be used with the most sensitive conjunctiva. For some time past he had given up the use of sulphur. Too much care cannot be taken in using the ointment Dr. Finny has referred to, as it leaves marks on the face. It should be a golden rule, in dealing with ladies, to use colourless applications for the face; and iodide of sulphur is far from that. He recognised the utility of what Dr. Finny had said as to the necessity of dividing the vessels. You cannot cause vessels of such size, when they occur, to shrink by internal means. The only method of dealing with them is to divide them with a fine knife. He thought bromic acne hardly came within the scope of his paper.

The HONORARY SECRETARY read a paper, written by DR. BERNARD, entitled "Diphtheria in Londonderry." [It will be found at p. 402.]

DR. ROBERT M'DONNELL said that he had had an opportunity of examining the lady mentioned in Dr. Bernard's paper yesterday, and he looked on her case as a very marked one of diphtheritic paralysis. The nasal intonation was extremely marked; her soft palate was hanging down, and her vision so much disturbed that she could not attempt to read even large type without the use of very powerful glasses. She requires a very powerful pair of convex spectacles. He also found that without having very marked palsy of the lower limbs her gait was very feeble, and in fact tottering. Even if there were no history of the case except her own account of her having had a sore throat, one could not fail to recognise the case as one of diphtheritic paralysis. He hoped she would recover, but it is too soon to draw a conclusion yet on the subject; her convalescence is only commencing. He had seen a good many cases of diphtheritic paralysis, but he never saw one in which that affection set in so early. It occurred on the third or fourth day, which is a very unusual thing. In cases he met himself it was much later than that, and it was by no means confined to the ganglionic nerves about the face. Dr. Brodie will remember a case he saw some time ago in which a gentleman who had had diphtheria in his family, though not very badly attacked by it himself, got so feeble and suffered such a marked loss of power in his lower extremities that when he attempted to jump across a small stream he fell into it, and, being unable to get out, lay there until he was nearly perished with cold.

DR. BRODIE remarked that the gentleman got well in a few days under the use of iodide of potassium.

DR. FINNY said it was a matter of physiological and practical interest to consider the relation between diphtheria and paralysis. Were they to be looked upon as cause and effect, or but exponents of the one



poison? Diphtheria is not necessarily followed by paralysis, and, if it be, the paralysis is not limited to parts supplied by such nerves as pass through ganglia. Of late there have been very few cases of diphtheria in Dublin, so far as he could judge from hospital and private practice, but five or six years ago he saw some severe cases, which were not, however, followed by any paraplegia or other paralytic symptom, while other extremely mild cases of it were followed by those symptoms. From this, as well as from analogy, he was of opinion that the paralysis is not necessarily connected with the extent of the diphtheritic exudation, but is due to blood-poisoning, similarly as paraplegia is seen to follow long typhoid fevers, attacks of diarrhoea, and other illnesses. The true cause of it probably lies in altered nerve function, due to some disturbance of the circulation in the spinal cord or other nerve-centres presiding over the part affected, so that they are in a state of anæmia—a view which seems confirmed by the absence of all spasm or hyperæsthesia, and by the benefit which follows the treatment by ergot, iron, and strychnia.

DR. DOYLE said a patient of his, a gentleman between sixty and seventy years of age, had been for the last twenty years suffering more or less from an affection of his throat. His soft palate and the pillars of his fauces were completely covered with a white membrane, but not that thick white membrane which is seen in epidemic diphtheria. On removing a portion of the membrane he saw that the surface underneath it was quite raw; he was also feverish. Under the use of lactic acid spray he has got on wonderfully well. Another gentleman about the same age who had resided next door to him died about five years ago of diphtheria. With respect to the diagnosis of diphtheria, he had been called in to see cases in which he found a false membrane partially over one of the tonsils and extending up the soft palate, and the patients did not complain much of sore throat, but only of febrile symptoms.

DR. HENRY KENNEDY said diphtheria, like other diseases, varies in intensity, and he had seen very different cases in the same families. One child had the white membrane over the throat, and another had very little of it. He thought it a narrow way of looking at the subject to say that a case is not diphtheria because there is not as much white membrane over the throat as has been seen in other cases. The only difference is in the intensity of the disease. With regard to the paralysis, some time ago he saw a very remarkable case, that of a boy seven years old, who when asked to put out his tongue was unable to do it, although he knew perfectly well what was said to him, and in the course of 24 hours he was unable to swallow, and in another 24 hours he was dead. He was at a loss as to the diagnosis of the case, but four or five days afterwards another child who was in the same room with that boy was attacked with diphtheria in a form about which there could be no doubt,

and then the case was cleared up. Some years ago when scarlatina was very formidable in the city, and it was the practice to blister the large tumours that formed, it was a common thing to see the blistered surface covered with the white membrane that characterises diphtheria.

Dr. Foot said there is a great deal of confusion as to what real diphtheria is, and on that the difference of opinion depends as to whether it is a common or a rare disease. True diphtheria he believed to be as rare as true cholera and as destructive. Amongst the clinical features of the disease were the tendency of the patient to sink from adynamia or asthenia, from early and unaccountable failure of the heart, an enlargement of the peripheral lymphatic glands, intolerable fœtor of the breath, and the presence of albumen in the urine. The pathological features of true diphtheria are also distinctive. The diphtheritic membrane dips into the submucous tissue, and cannot be withdrawn or detached without causing loss of substance and bleeding, whereas non-diphtheritic exudations are on the surface. In the true diphtheritic membrane also the impregnation with bacteria is more marked than in the case of other sore throats. Many of the dangerous sloughs that cause fatal hæmorrhage in typhoid fever are diphtheritic sloughs of the mucous membrane of the intestines, and it is because they penetrate to the submucous tissue that they are so certain to cause hæmorrhage in their detachment.

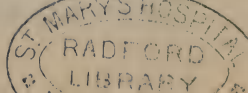
The following remarks have been since received from Dr. BERNARD :—

“I regret to say that the patient seen by Dr. M'Donnell, and who was the subject of discussion, died on the 9th of April. Before she left Derry her gait was not feeble nor tottering. The paralytic affection must have increased rapidly during the few days before Dr. M'Donnell's examination. This case proves that when there is any tendency in the paralysis to extend, a very guarded prognosis should be given. There are cases on record in which the paralytic affection set in before the disappearance of the membrane. In the first case the paralysis was entirely confined to the ganglionic branches of the third and facial. Dr. Finny's ingenious hypothesis as to the cause of the paralysis fails to explain the fact observed by Dr. Jackson—that the affection has a great preference for the ganglionic branches of the third and facial. I cannot agree with Dr. Foot when he says that true diphtheria is as rare as true cholera. I have never seen, since I left the Crimea, a case of true cholera, and many cases of true diphtheria have come under my notice.”

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BLACK URINE IN ACUTE POISONING FROM CHLORATE OF POTASSIUM.

Dr. JACOBI showed a sample of characteristically black urine, voided by a patient who had been poisoned by overdoses of chlorate of potassium, at a late meeting of a Medical Society at New York.—*N. Y. Med. Record*, Jan., 1881.



# PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

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## FORTY-THIRD ANNUAL SESSION.

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JOHN A. BYRNE, M.B., President.

WILLIAM ROE, M.D., Honorary Secretary.

*Saturday, April 2, 1881.*

The President, DR. BYRNE, in the Chair.

*Case of Ovariectomy.* By THOMAS MORE MADDEN, M.D., M.R.I.A.;  
Obstetric Physician to the Mater Misericordiæ Hospital, &c.

M. S., aged thirty-two, a farmer's wife, from Kerry, was admitted into the obstetric ward of the Mater Misericordiæ Hospital, November, 1880.

*History.*—For some months before her marriage, three years previously, she had noticed a fulness immediately under the ensiform cartilage. This continued to increase after marriage. But, as her menses had then ceased, and she suffered from morning sickness and other symptoms of pregnancy, the abdominal tumefaction was at first naturally ascribed to that cause. The increase in size, however, was more rapid than usual at the corresponding period of gestation, and being moreover attended by occasional attacks of severe pain and constant soreness and sense of discomfort, she sought medical advice in the nearest town, where, to her great relief, she was tapped and a large quantity of fluid was drawn off. Six weeks later labour set in, and she was delivered of a seven-months' child, which lived for a fortnight. As soon as she became convalescent she again observed a return of the abdominal swelling. This increased more rapidly than before, and was now accompanied with such urgent dyspnœa, discomfort, and inability to move about that she came up to town for further advice.

On admission into hospital she was suffering from daily repeated paroxysms of abdominal pain, and had almost incessant retching, the matter vomited being of a dark, grumous character. Her aspect was cachectic, and her limbs were greatly emaciated. The abdomen was equilaterally distended, measuring 38 inches at the umbilicus, 9 inches from this to the symphysis pubis, and 19 inches to crest of either ilium. Her pulse was weak and rapid; the respiration was hurried and embarrassed; the tongue was furred; the appetite very poor; and the

urine scanty and loaded with lithates. There was dulness on percussion over the entire abdomen, from the ensiform cartilage downwards, and extending to both hypochondriac regions, and it was only in a small part of the lumbar or posterior right hypochondrium that any resonance could be obtained. Nor was the area of dulness affected by any change of position. The abdominal walls were very thick and fatty, and there being, moreover, some œdema of the cellular tissue, it was not possible to obtain any distinct knowledge of the size and position of the tumour. The uterus was almost normal in size, but so drawn upwards by the morbid growth as to cause some difficulty in introducing the sound.

She was put on treatment to subdue the gastric irritation and improve her general health, and during this time Drs. McClinton and Kidd, in addition to the staff of the hospital, saw her.

Before operating a small quantity of fluid was aspirated from the tumour, and found to contain ovarian granular cells.

Ovariectomy was performed on the 13th December, Drs. Kidd, Atthill, Cranny, in addition to my colleagues, Drs. Hayes, Coppinger, Kilgariff, Nixon, Hayden, Kennedy, and Browne, kindly assisting. The patient was placed under methylene by Dr. Kennedy.

The tumour was multilocular, consisting of three cysts and a solid portion. The fluid contents were gelatinous, and amounted to eighteen pints.

The operation was protracted, owing to the great extent and density of the adhesions, especially anteriorly and superiorly, where they were so dense that in two places they had to be ligatured and divided by the knife; and for the same reason the first incision had to be enlarged above the umbilicus. The pedicle was ligatured and returned, and the wound closed by deep and superficial sutures. It is hardly necessary to observe that in the operation, and subsequent dressings, the antiseptic method was strictly carried out.

Immediately after the operation retching and hiccup set in, with alarming depression of the circulation, and continued almost incessantly for three days, causing considerable anxiety. These symptoms, however, gradually passed off, and on the 18th we were able to remove the superficial sutures, and two days subsequently the deep ones, when the wound was found firmly united, not a drop of pus having been formed throughout. She was allowed up on the 4th of January, and was discharged, perfectly well, a month after the operation.

#### *Uterine Polypus.*

DR. ROE.—This is a specimen of a uterine tumour which I removed on Thursday last from the interior of the uterus of a patient. I first saw her on the 24th of January last, when she was admitted to hospital, but as she was then suffering from a very bad cold and



was very ill, I thought it better to allow her to go home for a short time. On Thursday last she returned. She is sixty-five years of age, is forty years married, and has had three children. Her menstruation appears to have been always regular until about sixteen or seventeen years ago, when it became so profuse that she was almost blanched. This lasted for several years. Nine months before I saw her the hæmorrhage had stopped, and she was then told that a change in her constitution had arrived, and that she would be free from any further menstrual trouble. She, however, suffered great pain in the back and region of the bladder with difficulty of micturation, and she was treated in the country for gravel. On examination I found the os quite thin, and dilated to about the size of a florin, stretched over the tumour, which appeared to be about the size of an orange. You could just feel it through the os. The sound passed in front of the tumour (which was attached to the posterior wall of the uterus) for about five inches. I determined to remove the tumour, and proceeded to do so last Thursday. I may mention that she got no anæsthetic. With considerable difficulty I passed the wire round the tumour, which you may see is a large one, and has a very broad base. Having cut through the tumour, which I did very readily once the wire was applied, the next difficulty was to get the tumour through the os. Having seized it with the vulsellum, it being very large and not inclined to come through readily, I thought it better to incise the os, and even then with great difficulty got the tumour through with the assistance of my colleagues, Drs. Kidd and Neville. I afterwards washed out the uterus with a solution of Condyl's fluid, and, owing to some cervical hæmorrhage, thought it well to plug the os with cotton saturated with carbolic oil. She has gone on well since. To-day the plugs were removed, and there has not been a bad symptom of any kind.

#### *A Modification of the Ecraseur.*

DR. ROE.—With your permission, Sir, I will show the Society the instrument with which the tumour was removed. I would wish to do so because I think the slight modification I have made will prove useful. It is an ordinary *ecraseur*, but instead of the traveller being a hook it consists of a single piece of steel with two holes through which a wire may be passed and secured by a screw. All who are in the habit of mounting the ordinary *ecraseur* with steel wire are aware of how tedious it is; besides, with this simple appliance (which can be easily adapted to any old instrument) you can take in the wire as often as you please, and thus do away with the necessity of an endless screw. I have also had some small wire vices made which secure the wire to any part of the instrument in a second. They were made for me by Mr. White, who can supply them for any old instrument at a very trifling expense.

DR. ATTHILL said he thought the instrument shown was a practical and ingenious one, and calculated to be exceedingly useful in cases such as those described. He had himself often felt the difficulties alluded to by Dr. Roe.

DR. MORE MADDEN said the thanks of the Society were due to Dr. Roe for having shown them such an extremely ingenious appliance, which he had no doubt would work just as satisfactorily as the more expensive and complicated instruments.

*Two Specimens of Cystic Degeneration of the Chorionic Villi.*

DR. NEVILLE.—I show for my colleague, Dr. Poole, these two recent specimens of the so-called “cystic” or “hydatid” disease of the chorionic villi. Whatever be its true pathology the disease is one of sufficient rarity to make the exhibition of such specimens, accompanied by details of the cases from which they were taken, both useful and interesting. These two cases occurred during the past month in the practice of the Coombe Hospital. The history of the first case is as follows:—The patient, aged twenty-seven, had been married seven years, and had previously been pregnant three times. All these pregnancies were normal, and ended at term by the birth of living children. Her last child was born in August, 1879, and she nursed it until July, 1880. While suckling on this occasion she for the first time in her life suffered from continuous ill-health—nausea and vomiting, loss of strength, “weaknesses,” and wasting. She did not, however, suffer from any symptoms special to uterine or peri-uterine disease. She was not then, nor at any time, troubled with leucorrhœa. The menses did not return until three months after she had ceased to nurse. They then came on, lasted for about six days, being rather profuse but painless. This was the usual type of a menstrual period with her, and gave no evidence at any time of uterine disease. She menstruated again—a month afterwards, during the second week of November, since which time she dates her fourth pregnancy. From the early part of December until her admission into hospital (March 16th) she has been continuously in the most wretched state of health—retching incessantly, unable to eat or drink, and gradually reduced to the most extreme condition of prostration, which has kept her lying in bed for the past month. On the 3rd of March, after a very severe attack of vomiting, she noticed “a show” of blood. From that time until the 16th inst., when she was admitted into hospital, there was a constant trickling discharge of blood, never clotted or profuse. On admission, examination through the abdominal walls showed that the uterus had reached as high as the umbilicus. The enlargement was of the general shape of a gravid uterus at six months, but was peculiarly tense and resisting over its entire surface. No one part of it seemed more or less resisting than another, and neither foetal parts nor movements could

be felt. There were no auscultatory signs. On examination *per vaginam* the cervix felt rather small, firm, and well-defined. Its size or softness did not at all correspond to the size of the uterine enlargement. The os externum was closed, and only admitted the tip of the index finger on pressure. The lower zone of the uterus was much broadened out, filling up unnaturally the pelvic inlet, and feeling very resisting and hard. No ballottement could be obtained. The blood was coming very slowly, the discharge not being accompanied by any uterine pains.

Early next morning the nurse announced that this patient, having been seized with sudden uterine pains, had expelled into a basin about three pints of stuff resembling boiled sago grains, mixed with clotted blood. There was not much loss of blood, and when the patient was seen soon afterwards the os externum had closed and the uterus had contracted well. She was kept under treatment in hospital for a fortnight, at the end of which time she had greatly improved in appearance and strength. When leaving it was noticed that the uterus was apparently commencing to enlarge again, and we therefore thought that some portions of the chorion may have kept up organic connexion with the uterus and escaped expulsion. The woman was warned of the necessity to come into hospital again on the first signs of a recurrence of bleeding. This she promised to do, so that we may have a further example of the disease in this patient's case.

The second case I have to show is in some respects similar to that just mentioned. It occurred in the fourth pregnancy of a woman aged twenty-six, who had been married seven years. Her last child was born three years ago. She had nursed her children for nine or ten months, and the last for seven months, when it died. That child was born three years ago. Her husband was afterwards away until last November. After she weaned that child menstruation came on normally. She last menstruated in the second week of December without the flow showing any unusual characteristics. She enjoyed good health up to January, when she began to suffer from weakness and irritability of stomach. She lost flesh, and became wasted and worn. The first sign of bleeding occurred towards the end of February, and she said that what came was like coffee-grounds. These coffee-grounds discharges were not very much at first, but as they went on they became more distinctly bloody, and then watery, mixed with blood. She now noticed the rapid increase in her size. About two o'clock last Sunday uterine pains commenced and went on rapidly increasing until eight in the evening, when a mass of the same character as that exhibited was discharged. It differs from that in the other case in this respect, the cysts are much larger, some of them being the size of a plum. Shreds of the desidua were discharged; they appeared healthy and were not notably hypertrophied. In the other case I did not see any portion

of the desidua. In neither case was there what seemed to be any portion of a foetus. In the first case there were pieces of membrane from which the cysts could be seen hanging down.

DR. M'CLINTOCK.—Dr. Neville's specimens are valuable clinical illustrations. In both cases the patients presented symptoms which differed considerably from those of ordinary pregnancy. That and the disproportionate size of the volume of the uterus and the occasional watery or reddish discharges, were characteristic indeed of this disease, and well justified a suspicion, if not a positive diagnosis, of what was going on in utero. The total absence of any embryonic remains, or tissues of a foetus, is only what is observed in the majority of cases of cystic disease of the chorion. However, it is possible for a foetus in the third or fourth month to coexist with very extensive cystic disease. Both of the cases laid before us confirm the opinion entertained by the great majority of writers, and what I myself have always held—viz., that hydatids discharged from the uterus have dated at some time or other from conception. I do not myself hold the opinion, which I know has been advocated by some high authorities, that this so-called hydatid disease may arise independently of pregnancy. I have never seen, nor do I know of any well-authenticated fact establishing such an idea.

DR. MORE MADDEN.—A question of some interest is, the possibility of a woman expelling so-called uterine hydatids who has never had sexual connexion. This I believe to be possible. I cannot say that I ever saw a case—and I have seen a good many instances of the kind—in which these growths were not the result of cystic disease of the chorion of a blighted ovum. But other writers, of whose accuracy there can be no question, have recorded such cases, and I do not think it at all unreasonable to suppose it possible that, under certain circumstances, the unimpregnated ovule which escapes from the ovary every month, may be arrested in its passage through the uterus, and there undergo a monstrous development, or vesicular degeneration. In the great majority of cases hydatidiform moles are, as Dr. M'Clintock has just observed, unquestionably the result of conception, but it might possibly be otherwise. On another point a question of interest arises. We are advised, when assured of the existence of cystic disease in the uterus, to bring on labour as soon as possible. I think that is bad advice. I have seen the expulsion of so-called uterine hydatids, the result of cystic degeneration of the ovum, followed, four or five months later, by the birth of a full-grown living child; so that, while its development went on, a twin conception must have perished in the womb. As, therefore, hydatidiform moles may coexist with natural pregnancy, their existence, if it could be recognised, should not induce us to interfere with the case unless we were sure that the uterus did not contain another ovum at the same time; and, as such nicety of diagnosis is impossible, we should leave these cases to Nature.



THE PRESIDENT said that he could scarcely agree with the observations which had fallen from Dr. More Madden with regard to the fact of vesicular moles having been observed in virgins. No doubt, it occasionally happened that substances were expelled from the virgin uterus which were not unlike the product of conception, but which on careful analysis proved not to be such, but other substances which were not incompatible with virginity; but with regard to the vesicular mole, or rather vesicular chorionic degeneration, the fact had long since been established that it was always the product of conception, for what, in fact, is the pathology of it? It is a degeneration or metamorphosis of the foetal chorion; and how can there be a foetal chorion unless impregnation has taken place, unless we are prepared to admit the fact that the unimpregnated ovule in its Fallopian transit receives a covering similar to that which the ovum or impregnated ovule receives at its entrance into and arrest in utero—viz., a chorionic covering. We can scarcely then admit that vesicular degeneration can attack an ovule which is unimpregnated. There were two theories in explanation of the manner in which this remarkable formation occurred. The first—that adopted by Mettenheimer, Cruveilhier, Killian, and Barnes—is that the degeneration is the cause, and the death of the ovum the effect. The second—that adopted by Griese, Hewitt, and others—viz., that the foetus first dies in utero, and that the degeneration is the effect of the foetus dying just at this period of embryonic development. Now it is very difficult to come to any definite conclusion as to whether the degeneration is the cause or the effect of the death of the ovum. He had seen a good many cases of this affection, and he had one specimen in his collection in which large masses of vesicles, together with a compressed foetus of six months, were expelled. In this case it would appear, as if from some cause, placental formation had been going on simultaneously with chorionic degeneration, but that the latter proved victorious, and the foetus died and was expelled; or the alternative explanation may be given—the foetus died, remained in utero, and the placenta underwent degeneration of this vesicular kind, and was subsequently expelled. That it is either the cause or the effect of the death of the ovum we must all agree. I am inclined to think from my own experience and from what I have read that it is the cause; but the phenomenon is too remarkable to be explained by the double explanation, that it may either be the cause or effect.

*Report of 660 Cases of Midwifery in Australia.* By SAMUEL T. KNAGGS, M.D., M.Ch., F.R.C.S.I., L.K.Q.C.P.I.; late Senior Surgeon, Newcastle Hospital, New South Wales; Member, Royal Society, New South Wales.

THE following notes embrace the cases of midwifery which I have attended personally from 21st December, 1871, to 21st October, 1880, in the city and district of Newcastle, in the Colony of New South Wales.

Newcastle is the second city of importance in the Colony, is situated on the sea coast, at the mouth of the River Hunter, about sixty miles north of Sydney, our metropolis. The population of the city and district during the early portion of my practice amounted to about 18,000, but towards the later period had increased to about 25,000 souls, all of whom were of either European origin or descent.

As may be inferred from the name, Newcastle is the principal coal port of the Australian Colonies, and the cases now reported have occurred in a large general practice conducted by me amongst all classes, including the wives of those in affluent circumstances, as well as those of farmers, artisans, coal miners, and labourers. The actual number of obstetric cases occurring in my practice during the period in which the following are enumerated amounted to nearly 2,250, the majority of which were conducted by medical gentlemen associated with, and assisting me in my practice.<sup>a</sup> In this paper I confine myself exclusively to such cases that I have personally conducted. I can vouch for the accuracy of my returns, as it has been my practice never to leave any lying-in chamber without first entering in my pocket-book (a Letts' Medical Diary) the particulars of the case upon a form which I specially rule for that purpose, and which has places set apart for the following particulars:—

No. of case. Name of patient. Address. Date of accouchement. Sex of child  
Hour of birth. Delivery of afterbirth (in minutes). Number of confinement. Name  
of nurse. Complications. Remarks and results.

The following gives a synopsis of the cases attended:—

660 cases = 668 children		{ males 354, females 314.	
Of these 660 cases there were	{ 160 primiparæ = 163 children 500 pluriparæ = 505 children	{ males 79, females 84.	
		{ males 275, females 230.	
Twins, 8 cases		{ primiparæ 2, pluriparæ 6.	
Operations 91	{ forceps 88 vectis 1 version 2	{ long 24, short 64.	
Maternal deaths, 6 cases = 1 in 110.			

Maternal deaths, 6 cases = 1 in 110.

The above is a very convenient way of expressing the following summary:—The total number of cases were 660, producing 668 children—354 males and 314 females; 160 cases were primiparæ, giving birth to 163 children—79 males and 84 females; 500 cases were pluriparæ,

<sup>a</sup> An accurate record of all these cases have been kept, and I hope to be able to publish them before my return to Australia.

giving birth to 505 children—275 males and 230 females. There were 8 cases of twins—2 in primiparæ, 6 in pluriparæ. Maternal deaths from all causes amounted to 1 in 110.

The following table gives in a tabular form the various presentations and complications met with, and indicates those occurring in primiparæ and pluriparæ; in the fourth column will be found the proportional average which each presentation and complication bears to the total number of cases attended:—

TABLE I.

—	Primiparæ	Pluriparæ	Total	Proportion
1. Natural labours in which nothing abnormal occurred to mothers or children, - -	—	—	460	—
2. Breech presentation, - - - -	1	7	8	1 in 82½
3. Footling, - - - -	1	5	6	1 in 110
4. Face, - - - -	—	1	1	1 in 660
5. Face to pubis, - - - -	4	11	15	1 in 44
6. Shoulder and funis, - - - -	—	2	2	1 in 330
7. Twins, - - - -	2	6	8	1 in 82½
8. Stillborn, - - - -	2	9	11	1 in 60
9. Premature birth (living), - - - -	—	3	3	1 in 220
10. Miscarriages (3rd to 7th month), - - - -	4	8	12	1 in 55
11. Malformed children, - - - -	1	2	3	1 in 220
12. Albuminuria (without convulsions), - - - -	1	—	1	1 in 660
13. Convulsions—Hysterical, - - - -	1	1	2	1 in 330
„ „ Uræmic, - - - -	—	3	3	1 in 220
14. Dry labours, - - - -	—	3	3	1 in 220
15. Partial placenta prævia, - - - -	—	1	1	1 in 660
16. Post partum hæmorrhage (controllable), - - - -	3	8	11	1 in 60
17. Placenta retained—				
(a.) By atheromatous degeneration, - - - -	2	1	3	1 in 220
(b.) Adherent, - - - -	1	4	5	1 in 132
(c.) From inertia uteri, - - - -	4	4	8	1 in 82½
(d.) From irregular contraction, - - - -	3	6	9	1 in 73½
18. Puerperal fever (5 deaths), - - - -	—	5	5	1 in 132

1. *Natural Labours*.—In using the term “natural labours,” I do not confine myself to those cases strictly so called, but have excluded every case in which anything abnormal has occurred to mother or child during the progress of labour or during convalescence.

2. *Breech Presentation*.—This occurred 8 times—7 in pluriparæ, 1 in a primipara; 1 male child of a multipara was born dead; 1 male and 6 female children were born alive.

3. *Footlings*.—6 times—1 in primipara, 5 in pluriparæ—3 male and 3 female children. Of the latter a premature child was dead born at period of 6 months, the rest all living.

4. *Face*.—A male, the 8th child of a multiparæ; delivery had to be effected by short forceps; no history of any previous malpresentation.

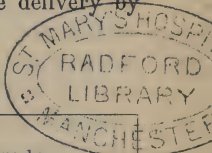
5. *Face to Pubis*.—15 times—10 in pluriparæ, 5 in primiparæ. These all caused very tedious labours, and 6 had to be terminated by the use of forceps. The long forceps once in a pluripara, the short forceps five times, thrice in primiparæ, twice in pluriparæ. All the children were born alive.

6. *Shoulder and Funis*.—Twice, both pluriparæ. In the first case the patient—a very delicate, cachectic subject—miscarried at the seventh month. The case was terminated by version, and up to the sixth day all went well; she then very injudiciously got up, and that evening was attacked by rigors; a low form of subacute metritis set in, accompanied by passive puerperal mania. The hallucinations and mental derangement lasted some time after the subsidence of the uterine inflammation. She recovered completely within a period of four months from the date of the first rigor. The second case occurred in a woman, aged forty, at her ninth pregnancy. She was put completely under the influence of chloroform when I performed version, after which I had much difficulty in extracting the shoulders, and finally had to complete the delivery by means of Simpson's long forceps.

7. *Twins*.—8 cases—2 in primiparæ, 6 in pluriparæ:—

TABLE II.

—	1st Child		Interval between each child	2nd Child		Remarks
	Sex	Presentation		Sex	Presentation	
1. Pluripara -	F.	Head	5 mins.	F.	Foot	One sac; double placenta.
2. „ -	F.	„	2 „	M.	Head	Do. do.
3. Primipara -	M.	Foot	20 „	M.	Foot	One sac; one placenta.
4. Pluripara -	F.	Head	70 „	M.	Breech	Flooding; removed placenta by hand.
5. Primipara -	M.	„	15 „	M.	Head	Miscarriage at 5 months.
6. Pluripara -	F.	„	10 „	F.	„	Double placenta.
7. „ -	F.	„	10 „	F.	„	7 months' children, dead.
8. „ -	F.	„	90 „	M.	Foot	Flooding; removed placenta by hand.





8. *Still-born Children*.—11 times—2 in primiparæ, 9 in pluriparæ. In several of these cases I was summoned too late to be able to arrive before the children were born. Of those where I was actually in attendance at the time of birth, one was a breech presentation, where a very large dead male child was born of a multipara after a very lingering labour. Another happened to a primipara, where the head presented with undue proportion between the head and passages; the patient was both weak and nervous, and would not accede to the use of instruments. Another case is that detailed elsewhere as having occurred in a multipara, who had tried to do without a doctor, and whom I had to deliver by forceps subsequent to the death of the child. Amongst these are also included the cases of version and craniotomy reported elsewhere.

9. *Premature Births* (living).—3 instances occurred in pluriparæ, 2 of which were born at 7th month of gestation. In one of these the membranous sac containing the fœtus and secundines was expelled entire. In the third case a fœtus was born alive at  $4\frac{1}{2}$  months, and lived for about 20 minutes.

10. *Miscarriages* from the 3rd to the 7th month occurred 12 times, all of them accompanied by more or less hæmorrhage.

*Abortions* before the third month I have met with frequently in my practice, but have not recorded them here. Some of them have been attended by considerable loss of blood, but none have terminated fatally. In these cases, when the abortion is inevitable from flooding, I completely plug the vagina through a speculum. I remove the plug within eight or ten hours, and find, as a rule, that the application of the tampon to the os stimulates the uterus to action, and has the effect of evacuating the contents. In this way have I found frequently that two indications are fulfilled—hæmorrhage is arrested, and the expulsion of the ovum is facilitated. In cases where the fœtus comes away, but the placenta has been retained, I consider it of great importance to thoroughly irrigate the vaginal passage, or, if possible, the uterine cavity, twice or thrice daily with a warm solution of permanganate of potass by means of the douche, and, at the same time, to thoroughly saturate the patient's system with sulphurous acid, given as a mixture, as described in the paragraph having reference to puerperal fever. My object in so doing is to cause the system to resist septic infection. In one instance under this treatment I have known the placenta to remain ten days in the uterus, and then be harmlessly expelled, whereas, had mechanical means been adopted to remove the placenta, disastrous results would probably have followed in consequence of the weak state of the patient.<sup>a</sup>

<sup>a</sup> I am indebted to my friend, Dr. J. M. Creed, of Scone, New South Wales, for this suggestion. He told me that he adopted this treatment in a case where, from no fault of his own, a placenta was retained in utero until its broken down putrid *débris* were evacuated in the lochial discharge, and the patient recovered. So much am I

11. *Malformed Children* were born in 3 instances—one, the child of a multipara, exhibited a cleft palate; the second, of a primipara, a face to pubis case, that had to be delivered by means of short forceps, had a double hare-lip and cleft palate—a most exaggerated deformity—where the ill-developed rudimentary premaxillary centre of ossification appeared at the tip of the child's nose. In this case it was of a hereditary character, several instances having occurred in the same family on the mother's side. The mother possessed a very high arched palate, so much so as to create the impression that she had narrowly escaped the deformity herself. The third case was born of a pluripara, and was a fine, healthy, male child at the full period, in whom the anterior wall of the bladder was found to be deficient, producing ectropion vesicæ; the testes were present, but only a rudimentary penis, which presented the usual split deformity, not having been united along the upper or dorsal commissure. When this child attained the age of three years, I successfully performed Wood's operation for forming an anterior covering for the bladder; he is now alive, six years of age, but suffers from the usual calcareous deposits which form under the artificial covering.

12. *Albuminuria*.—This was detected in a primipara several months before full period. By careful treatment, regulation of the excretions, and judicious management of the labour, delivery was effected without any appearance of convulsive action.

13. *Convulsions*.—*Hysterical* convulsions occurred in two instances—1 primipara, 1 pluripara; both were delivered by forceps, and no bad results followed. *Uræmic* convulsions appeared during three labours; two occurred in the same subject during consecutive labours, in both of which she was delivered by instruments; she died on the fifth day after the second labour from uræmia and total suppression of urine. She was a subject of chronic Bright's disease. The third case occurred in a pluripara who at her three previous confinements had most favourable deliveries. A slow recovery took place. The principal measures used were wet cupping to the back of the neck and between the shoulders, to about ten ounces of blood, chloroform, chloral, and the induction of a vigorous action of the excretory organs. During the convalescence of this case erysipelas of the mucous membrane of the throat and fauces set in, its symptoms simulating malignant diphtheria of a most sthenic character. Death was almost impending when metastasis suddenly took place to the extremities (hands and feet), and caused an immediate cessation of all the alarming symptoms. Three weeks after this the same patient was seized with general acute muscular rheumatism, which

impressed with the utility of thus guarding against septicæmia that, in my surgical practice, I rarely undertake any serious operation without first putting my patient through a precautionary course of sulphurous acid.

prostrated her for eight weeks, and fully two years elapsed before perfect health was restored.

14. *Dry labours* were met with in three multiparæ; two of them were identical in details; labour set in vigorously until the waters broke, then the pains ceased for three days, when the labour returned. One I left to the natural expulsive powers of the uterus, the other I terminated with short forceps. The third case was interesting; the waters broke six weeks before the child was born. In these cases the mothers and children did well.

15. *Partial placenta prævia* occurred in a multipara during her eighth labour. By an early rupture of the membranes and an early delivery no very serious hæmorrhage was permitted.

16. *Post Partum Hæmorrhage*.—Of this complication 11 cases occurred, 3 in primiparæ, 8 in pluriparæ; 2 in primiparæ followed instrumental deliveries by the short forceps. In three of the pluriparæ it was from inertia of the uterus, the muscular tissue of that organ having deteriorated in consequence of numerous labours. In one case of a pluripara it was produced by the retention of a portion of membrane. Two of the cases occurred in instances where twins were born, and the delivery of the second child delayed in consequence of a malpresentation. The other cases were associated with a partial detachment of the placenta during the third stage. In none of these cases except one was the hæmorrhage sufficiently alarming to threaten the patient's life, and they all submitted to the usual remedies, such as cold, firm pressure over the fundus of the uterus, or judicious administration of Battley's liquor ergotæ. In one instance, in which the hæmorrhage persisted after the expulsion of the placenta, a small lump of ice, inserted *in utero*, acted like a charm. In the one alarming case, where a copious flooding from inertia followed the rapid extrusion of the afterbirth, I plugged the vagina with a wet cloth, and firmly compressed the uterus by the hand, grasping it through the abdominal parietes for half an hour, at the end of which time uterine contraction was restored and a firm clot was pressed out. There was no more hæmorrhage, and the case did well. This occurred upon the 16th October, 1874, and I am aware that there are some obstetricians who would condemn the course that I was in that case compelled to adopt by the urgency of the hæmorrhage, and my having at the time no other means of arrest at hand. From the favourable result that I then attained I would not hesitate to employ the same means again. I was extremely gratified subsequently at finding in the volume of Braithwaite's "Retrospect of Medicine," published in January, 1875 (Vol. LXX., page lxii.), that the editors of that very useful publication strenuously advocated an identical procedure, which they had previously used and believed to be far preferable to the intra-uterine injection of a solution of the perchloride of iron.

I do not include amongst the foregoing cases a remarkable case where, after the delivery of the placenta, a continuous oozing of blood from the vaginal orifice puzzled me exceedingly for nearly half an hour. The uterine contraction was very fair, and in no way could I account for the bleeding. Upon a careful examination I found that a very slight perinæal laceration had fissured a varicose vein leading from the vulva, and from this fissure the oozing took place. A ligature at once put an end to my anxiety.

17. *Placenta Retained*.—In 25 cases the hand had to be introduced into the uterus to facilitate the removal of the placenta. The principal reasons for so doing were morbid adhesions, irregular contraction of the uterus, or to arrest a troublesome hæmorrhage.

(a.) *Morbid Adhesion*.—Of this complication 8 cases occurred, in 3 of which the placenta had undergone atheromatous degeneration. This happened twice in the same patient during consecutive confinements, and each time the placenta had to be removed piecemeal by the hand thirty minutes after the birth of the children, each of whom was born alive and survived. In the third instance a seven-months' child was born alive, and the friable placenta had to be taken away within fifteen minutes to arrest hæmorrhage. In these three instances a careful after-treatment was adopted, consisting of irrigating the uterus twice a day with a warm solution of Condyl's fluid, and the administration of sulphurous acid in the form of an agreeable acid drink. Of the 5 cases where an apparently healthy placenta was morbidly attached to the uterine wall, and had to be forcibly extracted by the hand, 1 occurred in a woman who tried to dispense with an accoucheur. The retention of the afterbirth alarmed the nurse, who sent for me, and on my arrival, finding that the child had been born two hours, I at once removed it. In the 4 other cases, where I had the advantage of being present at the birth of the child, I removed the placenta once in five minutes, once in fifteen minutes, and twice in thirty minutes after the birth of the child. In the first two instances the removal was necessitated to arrest hæmorrhage caused by a partial detachment, and in the two latter the total absence of hæmorrhage led to the diagnosis of a completely adherent placenta.

(b.) *Inertia of Uterus*.—Of the 8 cases from this cause, the placenta was retained once over sixty minutes, twice forty-five minutes, twice forty minutes, and three times thirty-five minutes. The first happened to a broken-down, delicate wife of a dissipated man, who was taken ill in her thirteenth pregnancy. In this and two other cases I was only called in after the birth of the child.

All these cases were accompanied by hæmorrhage, and in them all the introduction of the hand was productive of good by stimulating the uterus to contract.

(c.) *Irregular Contraction*.—Of the 9 cases where the placenta was



retained in the uterus, or partly in the uterus and vagina by irregular contraction, the periods of retention were as follows:—1 five hours; 1 three hours; 1 one hundred minutes; 2 one hour; 1 forty-five minutes; 2 thirty minutes; 1 twenty-five minutes. In the first 5 cases the children were born before my arrival.

In addition to the foregoing cases, the introduction of the hand into the uterus was necessitated six times almost immediately after delivery to arrest profuse hæmorrhage—2 in cases of twins, 2 after instrumental deliveries, 1 after version, and 1 to remove a portion of retained membrane. Thus in thirty-one instances, out of 660 cases, or showing a proportion of nearly 1 in 21 cases, had the hand to be introduced into the uterus for removal of the placenta;<sup>a</sup> and it is very satisfactory to report that in only one instance did any ill results follow, and in that case other causes than this operation were present which could sufficiently account for the fatal result.

*The Placenta.*—It is very instructive to note that in nearly half the cases of retained placenta, otherwise than those caused by morbid adhesion, the child was born before the arrival of the accoucheur, and in each of these cases the retention could be attributed to the want of judicious management on the part of the nurses who were present at the time of the birth of the child. In such instances I have invariably found that from the moment the child has entered the world the attention of the nurse becomes exclusively devoted to the little stranger, to the utter neglect of the mother.

It will generally be found that under ordinary circumstances, where due and proper attention is paid to the contraction of the uterus at the birth of the child, that the placenta will be expelled within twenty minutes from that period. It is my practice never to hurry the delivery of the placenta by either traction on the cord or undue pressure over the fundus of the uterus, but to make a steady, continuous pressure over the fundus by the palm of the hand from the birth of the child until the delivery of the placenta.

The following table shows at what period subsequently to the birth of the child the placenta was expelled in those cases where its delivery was effected by the natural action of the uterus:—

In 14 cases within 3 minutes.				In 8 cases within 35 minutes.			
62	“	“	5	“	7	“	40
219	“	“	10	“	5	“	45
131	“	“	15	“	2	“	50
111	“	“	20	“	2	“	55
37	“	“	25	“	5	“	60
26	“	“	30	“			

<sup>a</sup> In nearly all of these cases the medication by sulphurous acid, and subsequent frequent irrigation of the uterine cavity by a warm solution of permanganate of potass, were adopted.

As a general rule, I rarely allow the third stage of labour to exceed thirty minutes. As soon as possible after the expulsion of the placenta I adjust the binder, using a piece of unbleached calico about fifteen inches in width, which I apply in the manner similar to that which is taught and practised in the Dublin maternities.

18. *Puerperal Fever*.—From this calamitous complication I have had five deaths. The first case occurred in a delicate pluripara whose favourite child had been accidentally burnt to death a couple of months previous to her accouchement. This affliction had so preyed upon her mind that her health was undermined, and she became haunted with that ominous foreboding of impending death that becomes so fatal to a pregnant woman. It was her seventh labour, and it was accompanied by violent action of the uterus, alternating with inertia. It was a case of labour in which instrumental assistance would be invaluable—yet for a long time she positively declined my repeated requests to be allowed to use forceps, and did not accede to my wishes until the soft parts and passage became intensely hot and dry, and the vulva œdematous. She was seized with rigors on the third day, and died on the fourteenth day.

The second subject was a multipara, taken ill at her ninth confinement, who had determined, with the aid of an ignorant nurse, to do without a doctor. When she had suffered six hours continuous and unavailing agony, past midnight I was sent for. I found the pulse 140, very weak; the patient incessantly vomiting, the vulva œdematous, and the soft parts considerably swollen. The head of the child was impacted in the bony passage, and uterine action so violent that I dreaded rupture of the uterus at every moment, especially as the patient loudly complained of that cutting pain above the pubes which is so ominous to the obstetrician. With considerable difficulty the short forceps were adjusted, and the patient delivered of a very large male child, which must have been dead for some time. An asthenic form of puerperal fever followed, which ran a course of about five weeks, terminating in death.

The third death occurred in the person of a broken-down delicate woman, at her thirteenth labour, whose husband had caused her considerable worry and anxiety. When I arrived I found that the child had been born fully an hour, the placenta retained by inertia, and considerable hæmorrhage had taken place. Notwithstanding prompt treatment and careful nursing puerperal fever set in, and she died on the sixth day.

The fourth was a multipara at her ninth labour, who, without my knowledge or sanction, got up on the third day to attend to her household duties; rigors followed, puerperal fever set in, and she died on ninth day.

The fifth occurred in a fine healthy young woman at her fourth labour. Everything went well at the time. Twenty-four hours afterwards the nurse took upon herself to prescribe stewed raisins and oatmeal porridge as a purgative. This abominable mess at once disagreed with the

stomach, and caused vomiting of an uncontrollable nature. The lochia ceased, rigors set in, and death followed on the sixth day.

The first four cases occurred in the year 1874, during which scarlet fever, erysipelas, and septic fevers were very prevalent in all the Australian Colonies. Numerous deaths from puerperal causes occurred in the practices of other medical men throughout the Colonies, as well as in the same city where I was practising. Latterly, when such epidemics are prevalent, or indeed when any puerperal woman appears to be in a deteriorated state of health, I saturate the system with sulphurous acid, which I prescribe in a pleasant form as an acidulated drink, sweetened and flavoured with the syrup of orange peel.<sup>a</sup> My impression is that in so doing I guard against septic infection; and since I have adopted this treatment I have seen less feverish attacks following childbirth than I had previously noticed.

These deaths, with the one from puerperal convulsions previously noted, make my average of deaths amount to 1 in 110—certainly a high percentage; but it must be remembered that, in an extensive practice such as I was conducting with the assistance of other medical gentlemen, my juniors in the profession, the more serious cases, or such persons who anticipated bad times, would especially come under my care. I think, in estimating averages of deaths in any class of medical practice, the fact is frequently lost sight of that the more a practitioner gains the confidence of the public the higher will be his average of deaths, from the very fact that the increase of public confidence causes a more extensive practice amongst a more serious class of cases.

*Operations.*—I have performed craniotomy once, version twice. I have used the forceps eighty-eight times, and the vectis once.

The craniotomy was necessitated in a primipara, during the delivery of a female child at full period, in consequence of an extreme narrowing of the antero-posterior diameter of the pelvis. No bad results followed, as evidenced by the patient becoming pregnant two months after the operation. I strongly advised for the second confinement that labour should be induced at the seventh month, but was overruled by a religious objection on the part of the relatives. This caused me very considerable anxiety, but I was fortunate enough to deliver her of a healthy male child at full period by means of Simpson's long forceps, having first put the patient fully under the influence of chloroform. The child had a narrow tussel for his life. The resuscitation took fully half an hour, during which a warm bath and frictions were combined with Sylvester's method for promoting respiration.

<sup>a</sup> The following is the prescription :—Take of sulphurous acid three drachms, syrup of orange peel one ounce, water to make up eight ounces. The patient may take one tablespoonful in about a wineglassful of water every one, two, or three hours, as suits convenience or inclination.

The accompanying table will show the nature of the operations and the circumstances under which they were indicated :—

TABLE III.

Operations, &c.	Primiparæ	Multiparæ	Total
Craniotomy - - - - -	1	—	1
Long forceps, - - - - -	10	14	24
Short forceps, - - - - -	42	22	64
Vectis, - - - - -	1	—	1
Version and forceps, - - - - -	—	1	1
Version, - - - - -	—	1	1
Conditions requiring operations :—			
To facilitate labour in cases where disproportion existed between the head and passages, -	46	26	72
Girl 16 years of age, - - - - -	1	—	1
Face to pubis, - - - - -	2	4	6
Inertia, - - - - -	2	—	2
Face, - - - - -	—	1	1
Puerperal convulsions, - - - - -	1	2	3
Pelvic deformity, - - - - -	1	2	3
Subsequent to turning, - - - - -	—	1	1
First boy after 11 girls, - - - - -	—	1	1
Patient exceeding 38 years, - - - - -	1	—	1
20 years since previous child, - - - - -	—	1	1

*Forceps Cases.*—I have used the forceps 88 times in 660 cases. With this operation I have used Simpson's long forceps 23 times, Ziegler's once, and the short forceps of Professor Inglis of Aberdeen 64 times. In making the distinction between long and short forceps, and in using different instruments, it must not be inferred that I doubt the feasibility of performing all forceps operations with one instrument; but I think, for the sake of scientific accuracy, that some distinction should be made between the high and the low operation, especially when our results are utilised in statistics.

Professor Inglis' forceps is virtually a modified curved Simpson's forceps, fitted with a short clubbed handle, which enables it to be held



as you would hold a corkscrew. The special advantages that I have found it to possess are—(1) portability; (2) facility of application, without necessitating much trouble to, or shifting of, the patient; (3) improved power of traction; (4) improved power of guiding the traction; and (5) the absence of necessity for skilled assistance. In applying Inglis' forceps the patient is delivered while lying upon her back, the head supported upon pillows, the knees flexed and almost touching the nates—in point of fact, she is placed in the lithotomy position, with the midwife or attendant on the left side controlling her hands and left knee. The operator kneels on the bed, or stands at the foot of it, while applying the instrument. It is optional which blade shall be introduced first, but the posterior one will be the more convenient. In consequence of the patient's position the blade, once introduced, will remain *in situ* without being held, and leaves both hands at liberty for the insertion of the second blade. The late Professor Inglis first described it in *The Lancet* of 22nd December, 1866, p. 692.

Taking separately each of the first three years that I practised in the colony, what may appear to some an alarming increase in the proportion of forceps cases will be seen to be yearly exhibited in my practice:—

1st year in	51 cases,	not one forceps case.
2nd „	78 „	7 forceps cases (1 in 11)
3rd „	111 „	17 „ (1 in 6½)

In my first year's practice I lost two infants from tedious labours, whose lives I think would or should have been saved by the timely use of forceps. I carefully and cautiously introduced the practice of using instruments as an aid to labour, rather than a *dernier ressort*; and now, having attained a proportional average of 1 forceps case in about  $7\frac{1}{3}$  cases, I have no reason to be dissatisfied with the result. Only two maternal deaths<sup>a</sup> have occurred in the 88 instrumental deliveries, and these deaths did not occur from the use of the forceps, but from other causes, which in themselves necessitated the use of the forceps. Including 12 cases where I have been invited to operate in the practice of other practitioners, I have now used forceps in 100 instances, and I hope soon to make these cases the subject of a special paper.

*Vectis.*—This was in a primipara, in whom the head of a large male child got hitched above the pubes. I intended to use the forceps, but the insertion of one blade altered the position of the head, and the labour was completed by expulsive power of the uterus.

*Malpraxis by Unqualified Attendants.*—Several complications of a very unpleasant nature have occurred from malpraxis by unqualified attendants, in addition to those already incidentally mentioned in this Report. One instance occurred where a Sydney midwife came to Newcastle to see that her daughter should be properly attended at her accouchement.

<sup>a</sup> The first two cases mentioned under Puerperal Fever. Page 435.

On my arrival, in response to a message, I found that the child had been born five hours, and the placenta was yet undelivered, being retained by irregular contraction, which necessitated its being delivered by the hand. Having done so, I remained with the patient for fully one hour, and then left her comfortable and well bandaged up. It appears that the Sydney midwife did not approve of the Newcastle doctor's practice, for on returning in about four hours I found the patient almost moribund, the bandage removed, the uterus distended by a clot of blood larger than a child's head, and the patient's life-blood oozing from the vaginal orifice. The mother had carefully removed my bandage the moment my back was turned.

Another case was even more serious—fortunately for the nurse, it occurred in the case of fœtus at the sixth month of gestation. At midnight I was hurriedly summoned to a case in the country; the messenger was the woman's husband, and he requested me to bring instruments, as the nurse told him it was a cross-birth. The presentation puzzled me. The os was fully dilated, and protruding through it was a soft pultaceous mass, through the centre of which a movable spicula of bone protruded. Though the patient's linen was saturated with blood, the pains and intermissions between the pains did not produce those gushes of hæmorrhage that would aid in the diagnosis between partial and complete placenta prævia. The nurse noticed my perplexity, and handed me something wrapped up in a towel, saying, "I was wiping her, and this thing dropped out." Unfolding the towel, I beheld, to my horror, the mutilated arm of a premature infant that had been torn from its socket. The spicula of bone proved to be the clavicle. With the aid of a blunt hook the patient was, with much difficulty, delivered, the fœtus describing a similar revolution to that usually undergone in spontaneous evulsion.

One more case, and I shall conclude. One day, as I was passing through a village in the vicinity of Newcastle, I was requested to examine the body of a child said to have been born the previous night, the mother of which was in her ninth labour, and had been attended by three neighbours. Upon inquiry I found that it must have been either a breech or footling—they said it had come the wrong way first; the labour had lasted all night, and the poor creature in her sore travail had repeatedly begged that I should be sent for, but had been silenced by the assurance that all was going right. The child was perfectly blue and mottled, with its features swollen, exhibiting all the appearances of having been strangled during birth.

I was uncharitable enough to try and get these three honest women into trouble by sending them to the District Registrar to register the birth and death of their miserable victim, but my artful manœuvre signally failed. I had hoped that the Registrar would refer them to the Coroner, and that an inquest would ventilate the matter; but the

Registrar has no power to register still-births, and I am told that it is not within the province of the Coroner to hold inquests upon still-born children.

DR. M'CCLINTOCK.—Dr. Knaggs' paper is particularly valuable on account of the care with which his tables were prepared. He told me that he never allowed the night to close in after attending a case without making a record of the facts of it. Such are the data which are entitled to respect, and not those which are based on mere memory. No one can, therefore, raise any question as to the accuracy of Dr. Knaggs' results. He has frankly stated that his mortality has been 1 in 110. I myself several years ago published my belief—founded on a very long series of cases in the private practice of different eminent accoucheurs—that the mortality among lying-in women, delivered under the most favourable circumstances, is about 1 in 120. We now find that in a healthy colony it is 1 in 110. The extent to which Dr. Knaggs used the forceps seems to have been a little under 1 in 8. I consider that to be pretty frequent, and some may think if he had left a greater number of cases to nature, his mortality would not perhaps have been so high. It appears to have been most frequently required by primiparæ, the frequency with them being 1 in 3, while it was only 1 in 14 amongst the pluriparæ. The latter I think even a higher rate comparatively than the former.

DR. ATTHILL.—The comments of Dr. M'Cclintock on the use of the forceps by Dr. Knaggs express very much what I should have said if he had not made them. When I first began to practise I used the forceps very frequently. My predecessor in the Rotunda Hospital, Dr. Johnston, used it on an average in 1 case out of every 10. During the first two years of my Mastership I used it once in every 14 cases, and during the last couple of years I used it only once in every 20 or 22 cases. As my experience increased I came to the conclusion that the very frequent use of the forceps was not conducive to the well-being of either the mother or the child. I believe that so far from saving infantile life, the too-frequent use of the instrument, especially in what is called the high operation, is not followed by the permanent vitality of the child, though it may be born alive so far as breathing is concerned. If I might venture to do so I would advise Dr. Knaggs to use Barnes' double-curved forceps only, and not to carry about two pairs with him. His examples of plugging in *post partum* hæmorrhages are most instructive. It is a practice I often thought of. There is one grave objection to it—namely, that unless the practitioner thoroughly understands what contraction of the uterus means he may allow the uterus to swell above his hand, and so you may have intra-uterine hæmorrhage going on while there is none from the vulva. With a skilled practitioner, however, the practice might be safe, provided the

abdominal walls are thin so that the outline of the uterus can be clearly made out. Dr. Knaggs has confirmed the view I have always maintained as to the danger of continually pressing off the clots which form in *post partum* hæmorrhage. I know of no more dangerous practice than "kneading the uterus." When bleeding occurs a clot forms in the uterus, and if it be left where it is you will have no more hæmorrhage if there be moderately firm contraction of the uterus, but if you press it out the hæmorrhage recommences, and is in fact encouraged. Dr. Knaggs' statistics as to deaths from puerperal fever nearly correspond with the results of my own private practice. In my practice, which has extended over nearly thirty years, the deaths in childbed have been nearly 1 in 110. His statements also prove that puerperal fever is not necessarily a disease of hospitals. In the course of a discussion on puerperal fever which took place in this Hall some years ago I remember the late Dr. Stokes mentioning that he asked a practitioner from Australia if he had any puerperal fever occurring in his practice. "Oh, yes, plenty," was the reply. "Did the cases arise in hospital?" "In hospital! there is not an hospital within five hundred miles of me." I have received from Dr. Knaggs a hint which I shall act on as to the use of sulphurous acid. I used to give it to scarlatina patients, and also to the healthy persons in the house with them, and I believe it to be an admirable medicine in that disease—and puerperal fever is an allied one. In the Rotunda Hospital, whenever an unhealthy condition occurs, I frequently administered to every patient, for some days after delivery, a dose of the hyposulphite or sulpho-carbolate of soda in an infusion of ergot, three times a day, as a prophylactic, with very good results. Want of contraction of the uterus is a predisposing cause of puerperal septicæmia, and leads to puerperal fever in a great majority of the cases of that disease; and the administration of ergot, therefore, tending as it does to secure contraction of the uterus, is of great value. With the permission of the Society I propose a vote of thanks to Dr. Knaggs for his admirable and instructive paper.

DR. DILL.—I rise to second the motion, which I do very cordially. I agree with Dr. Atthill that if in a colony like that in which Dr. Knaggs practised it is unnecessary to carry more than one forceps, and that the large one will answer all purposes, I am far from thinking that we might not have even a larger instrument than that offered to the public by Dr. Barnes, which I agree with Dr. Atthill in thinking is the best now. As to the management of the third stage of labour. An old professional friend of mine who was a most successful accoucheur told me that he never had a fatal case of *post partum* hæmorrhage, which was a most extraordinary thing. His invariable practice was to dip a small plug of tow or fine cotton in whisky mixed with a little water—about half of each—and introduce it carefully into the os; and he said that he did so



not so much for the sake of the plug as because the mixture exerted an antiseptic influence and stimulated the uterus to contract.

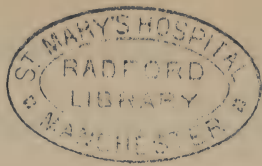
The motion was carried by acclamation.

DR. HARLEY—It appears from Dr. Knaggs' statistics that out of 600 cases there were not more than 20 in which the placenta was retained above half an hour. I think that shows the muscular strength of the colonial women is greater than that of those at home.

DR. KNAGGS (in reply).—I have to thank the Society for the resolution passed, and for the very kind remarks which members have made upon my paper. I had only two deaths amongst the cases in which I used the forceps, and in these I believe that death resulted not from the application of the instrument, but from the causes which necessitated the use of it. In one of these cases another child of the woman had been burned a couple of months previous to her confinement, which brought on mental depression and foreboding, which is so injurious to a parturient woman. In the other case the woman had been previously attended by an unqualified midwife, and at the time I came had been six hours in labour, and the head of the child was impacted at the brim of the pelvis. After a great deal of trouble I delivered her of a dead child. I do not think that in either of those cases my use of the forceps can be blamed. With respect to the patient over thirty-eight years of age, in whose case the forceps was used, her age produced that rigidity of those parts which necessitated instruments. She had previously abstained from marrying until she reached that age, in order that she might have no children. I had a great deal of trouble in extracting her child, which was a large one, with a long forceps. In fifteen months she was delivered of triplets, and fifteen months afterwards of another child. I perfectly agree with Dr. Atthill's remarks as to plugging the vagina in *post partum* hæmorrhage. In the one case wherein I had to plug I did not knead the uterus, but with one hand grasped the uterus, whilst I retained the plug in the vagina for half an hour; and then the uterus, having recovered its tonicity, expelled one large clot, and there was no more oozing. My sulphurous acid mixture was composed of two or three ounces of the acid, an ounce of syrup of orange-peel, and eight ounces of water. I allowed patients to take a tablespoonful of it, in half a tumbler or less of water, as often as they liked. Sometimes the smell prevented patients from taking it, but as a rule they did so very well. I perfectly agree with Dr. Dill's remarks as to the use of only one forceps. As to the retention of the placenta not happening so frequently there as here, a cause of it is, that as a rule the women are more muscular than those at home—they eat plenty of meat.

The PRESIDENT.—Did you ever attend any of the aborigines?

DR. KNAGGS.—No; my practice lay altogether amongst the white inhabitants—persons of European birth.



## PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—ARTHUR WYNNE FOOT, M.D.

Secretary—E. H. BENNETT, M.D.

*Abdominal and Pelvic Tumours.*—DR. WALTER G. SMITH exhibited the abdominal viscera of a woman, aged sixty-two, who died in the Adelaide Hospital on November 20th. She enjoyed good health up to the beginning of September, 1880, when she noticed a slight general swelling of the abdomen. Shortly afterwards she felt obliged to micturate very frequently, her bowels became sluggish, and her appetite and general health failed. She was admitted into hospital October 27th, and, upon examination, tumours were discovered in four situations in the abdomen—(a) a transverse cylindroid mass below umbilicus; (b) a rounded lump in right lumbar region; (c) a round tumour deep in left iliac fossa, adjacent to (d) a hemispherical tumour above the pelvis. The cervix uteri was enlarged and low in the pelvis, and the hypogastric tumour could be moved slightly with the uterus. Her strength gradually declined, yet she suffered no pain; and on the morning of November 20th she suddenly complained of pain in the head, sat up in bed for a few minutes, said she was dying, her head fell forwards, and she quietly passed away.

*Autopsy.*—The peritoneum contained a quantity of pale yellow serum, but showed no signs of recent peritonitis. Numerous whitish firm nodules on the under-surface of the diaphragm, a few on the right lobe of the liver, and the omentum was thickly studded with small nodules. Firm carcinomatous masses were found in the situations of the epigastric and lumbar tumours observed during life. The uterus and its appendages were firmly attached to the walls of the pelvis. Left ovary infiltrated with white nodules, and surmounting it was a large trilobed cyst, containing brown grumous fluid. This corresponded to the left iliac tumour. Lateral walls of bladder much thickened, to the extent of three-quarters of an inch. The uterus was enlarged, its cavity measuring nearly five inches in length. The posterior wall of uterus was thrust forwards by a large growth. Upon dissecting off the mucous membrane, a firm whitish tumour was apparent, imbedded in the uterine substance, but separable from it, and projecting into Douglas's space. A single circular ulcer was found in the rectum,  $1\frac{1}{2}$  inches from the arms. Microscopically the peritoneal nodules exhibited a characteristic carcinomatous structure. The uterine tumour was made

up of large, overlapping, spindle cells, with a good deal of wavy fibrous tissue. The thickened wall of the bladder was composed of interlaced fibroid tissue.

DR. BENNETT asked had Dr. Smith traced the Fallopian tube in reference to the cystic growth, because in the obscurity of the specimen, seen for the first time, the idea that occurred to him was that the cyst opened might have been a retention cyst caused by an obstruction of the Fallopian tube, and not an ovarian cyst at all. The matting together of the structures would suggest that neither the uterus nor the bladder was the primary seat of disease. Whatever its nature, the seat of disease was extra-uterine and extra-vesical. He did not think there was any necessity of looking to the uterine tumour as the primary cause, because it appeared to be one of the benign tumours of the uterus of ordinary growth.

DR. SMITH replied:—He was unable to advance any conjecture as to the cause of death. The point raised was exactly the one that arose to his own mind as to whether or not the commencement of the disease was intra-pelvic or extra-pelvic. He concurred with Dr. Bennett that there could scarcely be any doubt, judging of the appearances by the naked eye, that it was a uterine myoma. There was nothing to justify the belief in its being an alveolar sarcoma. He would like to ascertain what was the reason and nature of the unusual amount of thickening of the walls of the bladder. He could scarcely see how adhesions or matting together of the pelvic organs would cause such an amount of thickening as existed.—*December 11, 1880.*

*Dislocation of the Sternal Extremity of the Clavicle, with Fractures of the Costal Cartilages ; Double Vertical Fracture of the Pelvis.*—DR. BENNETT said: This specimen was taken from the body of a man who was crushed on the Kingstown Railway on the last day of last month. The accident occurred thus:—He was sleeping, contrary to the rules of the company, in one of the carriages on one of the sidings; and being roused in the morning by the shunting of the carriage, he started from his sleep, and without looking where he was leaping, leaped as the carriage was passing a buttress, and was caught between the latter and the carriage in motion. The place where he was caught was extremely narrow, and he was rolled a short distance, at all events, against the wall in a vertical position, so that it became necessary to back the carriage in order to unroll him. It was not possible to determine, from any account of the matter, the exact way in which the rolling process was performed, but we concluded that the injuries which he sustained on the lower half of the right side of the body were produced by rotation from left to right—from the middle line outwards. He was in a state of profound collapse when he was brought to the hospital, and clearly in such a condition

that he would probably die before reaction came on. He was admitted at 8 30 in the morning, and slowly sank towards the middle of the day, his distress being chiefly respiratory—in fact, his dying seemed to be more in consequence of failure of respiration than anything else, his blood not being oxygenated in consequence of the great thoracic injuries which he had sustained. He did not suffer from emphysema, nor—except to a very small amount—cough up blood, or show any symptoms of hæmothorax. The extent of the injury on the right side was apparent from the fact that the ribs fell in and out with each effort at respiration, and on the opposite side it was equally evident that injuries had occurred, but higher up, the clavicle being dislocated backwards from the sternum. There was some little difference of opinion as to the nature of the dislocation of the clavicle, and it at first seemed not easy to reduce it. While we were examining him as he lay in bed, it happened that by resting my hand on his shoulder, and pressing it backwards, I reduced the dislocation, but it at once recurred, and the man's condition was too low for a more detailed examination. His pelvis was also broken, but, like many cases of the kind, the fracture exhibited but few symptoms. There was no crepitation to be obtained by the ordinary handling of the pelvis, and it was only by pressing the hand on the superior spine of the ilium that we could detect the fracture. We could rotate the whole right lower extremity by pressing the anterior superior spine of the ilium outwards. The interest of this injury consists in this, that the form of the pelvic fracture was a double vertical fracture of the innominate bone, a fracture of the pubes near the middle line, and a fracture passing through the articulation of the sacrum with the ilium, without involving the opposite side. There was no injury to the opposite side of the pelvis whatever—that is, the fracture was confined strictly to one side, and was so complete that the bones of the whole lower extremity could be rotated with a single finger. In one case of this injury which I saw some time ago, the displacement was very great—the bone ascending two inches above its normal level. In that instance I was able to reduce the fracture with facility, and the patient recovered. In another case also the patient recovered, the injuries having been caused by forces tending to rend the pelvis asunder, and not to crush it; consequently, there was no injury to the viscera, although the fractures were otherwise grave and serious enough. In the present case I verified the details of the injury which I have now mentioned by a *post mortem* examination, but I was unable, in consequence of the pressure of time, to remove the specimen—in fact, I would have had to remove the whole pelvis in order to show the specimen perfectly. The thoracic lesions are here, and are of interest as verifications of the facts, now pretty well known, as to the character of fractures of the costal cartilages. We have here three costal cartilages from the right side, of which Nos. 2, 3, and 4 are broken at a



distance of from half an inch to an inch from the sternum. They are all broken sheer across—they are transverse fractures, without any jagging, the fractures being like those of a radish, as the French describe it. There is considerable tearing of the tissues round, the posterior perichondral membrane, however, being, except in the upper one, where the displacement was greatest, still intact. Where there was so great a wound in the side of the chest, it was difficult to understand why there existed no signs of hæmothorax during life, for we could hardly imagine such an extent of laceration without a great amount of hæmorrhage; but we found that the pleura on that side was entirely adherent, and that there did not exist a cavity of the pleura capable of containing blood, in consequence of which any hæmorrhage that occurred took place into the anterior mediastinum, and a considerable, though not a great quantity of blood filled this space. There is an example here of luxation of the clavicle, but we cannot regard it as simple luxation of the clavicle, for it has combined with it a rare injury—namely, fracture of the first costal cartilage at its junction with the sternum. The clavicle has gone back directly towards the thoracic cavity. The first rib has, so to say, left a very small piece of cartilage attached to the sternum, and so, though it looks like a dislocation, it is a fracture of the cartilage of the first rib at its junction with the sternum, and not a dislocation. In the clavicular dislocation we find, on turning back the muscles, that the transverse ligament between the two clavicles is still present, though strained and somewhat ruptured. The fibres passing over the anterior aspect of the sterno-clavicular joint are ruptured at their attachment to the sternum, or are torn clean away from it, and the superior ligaments, though not torn away, are lacerated very considerably. The inter-articular cartilage is detached absolutely from its sternal connexion, and it and the clavicle, and the outer joint between the cartilage and the clavicle, have gone completely backwards to the thorax—that is, the lesion has passed through the joint next to the sternum. The rarity of this dislocation made me desire to place the specimen on record.—*December 18, 1880.*

*Excision of the Os Calcis.*—MR. WHEELER said: This is the entire of the os calcis which I excised from the foot of a young lady aged fourteen years. Skating on the rink about two years since, she turned her ankle, and got a swelling on the inside of her foot at the lower and inner part of the os calcis. After a time an abscess formed, which burst. I saw her when the abscess was discharging, and on passing a probe touched the bone, which was denuded and bare. She was treated for some time with injections into the sinus, and afterwards locally treated with potassa c. calce, although I have not much faith in its curative powers. It appeared to heal for a time, but failed to do so completely, whereupon I determined

to cut down on the bone and see if I could remove the diseased portion, and thus save her foot. I made a section in order to try and take away only the diseased portion of the os calcis. The portion of it which I now point to is perfectly sound. Examining it farther up I found that the whole of the interior was broken up, and it easily broke down when I attempted to touch it. Here is the articular surface where it comes into contact with the cuboid bone. What I am now showing you makes up the entire of the os calcis. I am not aware that many specimens of this description have been shown, but I do know of two—viz., one by the late Mr. Tyrrell and one by myself, the latter having been an excision of the entire os calcis. Excision of the entire os calcis was performed for the first time in the United Kingdom about thirty-seven years ago by the late Mr. Handcock, and the operation was afterwards repeated by different surgeons. Mr. Buchanan, of Glasgow, laid down the curious theory that though you might remove the os calcis in its entirety, leaving the articular surface where the os calcis articulates with the cuboid bone intact, yet that, if you cut off the articular surface of the cuboid bone, the disease would be progressive and would run into the other bones. That has not been found to be the case by experience; and the interesting part of this specimen is, that you may see where the disease actually commenced, and where the abscess formed, and you can see the disease passing into the anterior portion of the bone and up to the cartilage between it and the cuboid.

The PRESIDENT.—Can you form an opinion as to whether the disease commenced in the bone or ligaments?

MR. WHEELER.—I take it to have been in the bone, because all the ligaments are perfectly intact, and also from the rapidity of the disease.

DR. BENNETT.—Was any attempt made to effect subperiosteal resection? I think in a case recorded by the late Mr. Tyrrell he attempted to make subperiosteal section; but he rather condemned the proceeding, as the recovery seemed to be slow in consequence of the suppuration of the stalactites of bone that were produced round the diseased structure. Whether such subperiosteal section ought to be made or not is a question of extreme importance to determine. It happened to myself once to succeed in making a subperiosteal section in excising the elbow. I was forced, from the circumstances of the case, to complete the operation as a subperiosteal one—that is, when I came down on the bone and found a thickened periosteum, I found it inconvenient to deal with the case otherwise than by cutting inside it. That case, which was a most unfavourable one, was in some respects like Mr. Tyrrell's os calcis case—that is, it was very tedious in recovery—but the ultimate result has been one of the best that I have ever seen. But there was a suppuration going on for a year before recovery. I do not think we should lose sight of subperiosteal section as we are apt to do in this country.

MR. WHEELER.—What has been mentioned occurred to me before the operation, and it would have been a matter of considerable use to have left the periosteum behind, but for this reason—over the anterior portion of the bone we had a quantity of broken material, which was stuck in the periosteum and which I had to pull away, and in doing so a great portion of the periosteum itself came away with it. A portion of the periosteum would have remained, but, from my experience of the suppuration which I knew followed in such cases, I did not wish to let that occur and leave a portion of the periosteum remaining. If I could have left it in its place in its entirety without any carious matter sticking to it, I would have been very glad to have done so. That is why I did not perform the operation referred to.—*January 8, 1881.*

*Vesical Calculus.*—MR. WHEELER said: This is a calculus which I extracted by lateral lithotomy from the bladder of a man aged twenty-eight years. His history is interesting. From the time he was eight years of age he had suffered from this stone. Up to the time he was twenty years of age he used to pass water which was red like blood. For this he was treated medicinally from time to time, and the symptoms would for a time subside. The calculus weighs 522 grains and is phosphatic on the outside. I would have taken the nucleus for one of lithic acid, but Dr. Bennett who examined it with me convinced me that it consists of oxalate of lime with a mixture of ammonio-magnesian phosphate. It was a very hard stone to cut. This [another specimen] is a calculus of not quite three drachms weight which I took from a boy of thirteen years by lateral lithotomy. He had no symptoms of calculus except when he was passing water—that is, he could exercise, run, and jump on his heels without pain, but when passing water he complained of intense pain.

DR. BENNETT.—What was the duration of his symptoms?

MR. WHEELER.—Three years, as far as I could ascertain.

THE PRESIDENT.—Did they both make good recoveries?

MR. WHEELER.—They did. The boy was well and out of hospital in five weeks. The man had got a fistulous opening, and was not able to pass water through the urethra so early as the boy. The latter could do so about the eleventh or twelfth day, the man not till the nineteenth. Otherwise both made good recoveries.

DR. BENNETT.—Both specimens are of interest as illustrating the fact that calculi of oxalate of lime, of comparatively slow growth and presenting a smooth surface, remain in the bladder for a great length of time without any marked symptoms; and when irritation leading to the development of external symptoms occurs, the surface of the calculus is roughened by the deposit of ammonio-magnesian phosphates. Before this occurs the calculus gives no inconvenience—at least nothing sufficient

to call for surgical attention. I think a microscopic examination of the nucleus of each of these calculi would be very desirable.—*January 8, 1881.*

*Caries of the Tarsus.*—SURGEON-MAJOR JACKSON said: This man was transferred from the Station Hospital, Athlone, on 6th October last to be invalided for a lumbar abscess. This had been emptied by the aspirator. He at the same time suffered from scrofulous disease of bones of right ankle. There were several sinuses from which a profuse discharge of thick, cheesy matter escaped. A probe could be passed right through, below, and behind the malleoli. As his health was much impaired, and irritative fever becoming more marked, with cough and night-sweats, it was obvious that if an operation was not performed his strength would rapidly become exhausted. On the 15th November Mr. Wheeler, of the City of Dublin Hospital, was so good as to give the benefit of his advice in consultation with Surgeon-Major Colahan Barnwell and the medical officers attached to the Royal Infirmary; and the patient being under chloroform, a careful examination of the joint was made, and extensive disease was apparent. The foot was removed by Syme's amputation—the most marked feature in the operation being the great difficulty of separating the periosteum of the os calcis. The vessels were much enlarged, and sixteen ligatures were necessary. As the lower articulating surface of tibia and outer malleolus appeared in some degree affected, a section of these was made rather higher than usual. The incision was united by silver sutures, a ligature end being passed through one of the apertures of the sinuses to act as a drain. The case has gone on favourably. The fever increased for a day or two subsequent to the amputation, his temperature on 16th reaching  $105^{\circ}$ , with a pulse of 120. He states he received a severe injury to right ankle-joint about two years ago, his horse having fallen with him while at riding drill at Athlone. He was then eight days in hospital; in 1879 was thirty-one days in hospital, and on present occasion has been eleven months under treatment. On making an examination of foot it was found that the disease commenced apparently in middle cuneiform or base of second metatarsal bone. On making a section over the dorsum of foot the tendons were found in some degree matted together by chronic inflammatory action. On opening articulation between the cuneiform and metatarsal bones, the carious disease was more marked in middle cuneiform and base of second metatarsal bones. The cartilage of first metatarsal was tolerably healthy, as also that of internal cuneiform bone; but on closer examination, even in these bones there was a tendency to shed the cartilage; external cuneiform was extensively diseased on its inner surface, the cartilage destroyed, the surface articulating with cuboid tolerably healthy. The cuboid was more diseased on its superior and



internal surface than anteriorly; in addition the fourth and fifth metatarsal bones were considerably diseased; the posterior surface of middle cuneiform, where it joins scaphoid, had the cartilage separated with well-marked caries behind. Scaphoid was extensively diseased on its anterior, posterior, and superior surfaces. On the astragalus, where it articulates with the scaphoid, the cartilage presented a dark appearance, and on detaching it from the bone the latter was found much diseased. Corresponding with the darkened portion of cartilage the bone was carious for a considerable distance backwards, and also on its upper surface, but seemed to be least affected on its inferior surface, where it articulates with the os calcis. The os calcis was extensively diseased. The section of tibia and fibula shows these bones to be perfectly healthy within the limits prescribed by Syme.—*January 15, 1881.*

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#### USE OF THYMOL IN BURNS.

DR. FUELLER, of Neukirchhof, a mining district in which burns caused by explosions of fire-damp or powder are frequent, has adopted a mode of treatment of burns by thymol which he has found attended by most favourable results. Each patient, as soon as admitted to the hospital, receives a warm bath. The burnt surface and its surroundings are then washed with an aqueous thymol solution, of 1 to 1,000, followed by the application of thymol spray for several minutes. The blisters are not disturbed, but are handled with extreme care. The raw surface is then painted with a one per cent. thymolised linseed oil. The patient is then laid on a waterproof mattress, the temperature of the room being kept comfortably warm. Particles of coal or other foreign matter, if not too minute, are, as a matter of course, at once removed. It is often very difficult to so lay the patient that the burned places are relieved of pressure, and it is frequently necessary to allow him to remain in a sitting posture, sometimes for several days, with support for the chin, or even *à la vache*, by suspending him by means of wide strips of muslin, passing under the chest or abdomen—the strips being fastened above. The application of thymol should at first be repeated every ten minutes, and as it relieves pain very remarkably, the patients themselves call for it. For this purpose we use large, soft-haired paint-brushes. At first the oil is absorbed somewhat rapidly, and as soon as this has occurred a sensation of intense burning follows. The applications are gradually made less frequently; as an indication of their necessity, the appearance of the skin is sufficient. As soon as the oil is entirely absorbed, it should be replaced by a fresh portion, as it is important to prevent contact with the air. During the first few days the thymol spray is also applied as often as possible, which does much toward alleviating the pain.—*Hom. Rundschau and Therapeutic Gaz.*

# TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

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SESSION 1880-81.

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President—J. WALTON BROWNE, B.A., M.D.

Hon. Secretary—WILLIAM WHITLA, M.D.

*Second Meeting.*

The PRESIDENT in the Chair.

*The President's Opening Address.* By J. WALTON BROWNE, B.A., M.D., M.R.C.S.E.; Member, Surgical Society of Ireland; Surgeon, and Lecturer upon Clinical Surgery, Belfast Royal Hospital; Surgeon, Belfast Ophthalmic Hospital; Member, Glasgow and West of Scotland Medical Association.

I VENTURE this evening to detain you for a short time upon the anæsthetics—Chloroform and Ether, their Advantages and Disadvantages. I hope also to mention some statistics, and draw your attention to a few of the remedies used to prevent poisoning by chloroform and ether.

Nearly every member of the Society, and especially those engaged in surgical and obstetrical practice, must, to a large extent, use anæsthetics; and I trust that every member will be able to give his experience upon the use of the two anæsthetics.

I may commence by saying that I have a firm and unshaken faith in chloroform, having been present at, or taken part in, its administration hundreds and hundreds of times, and will continue to use it until a more satisfactory anæsthetic is introduced to our notice. The prompt action of chloroform and the calm sleep which it induces, its pleasant odour and taste, and the usual absence of subsequent vomiting, if care be taken in dieting the patient, would be alone sufficient to secure its general adoption were it not that so many physicians and surgeons regard it as uncertain and dangerous. With some the conviction is so decided that they advocate its entire disuse as the only radical method of avoiding the attendant risks.

I am quite cognisant of the fact that certain medical journals have denounced the use of chloroform and highly approve of the use of ether. And one recent writer went so far as to say that—"A surgeon who used chloroform in preference to ether, should a death occur in his practice, deserved to be tried for manslaughter."

The medical journals still continue to report a noticeable number of

fatal cases of chloroform poisoning, and these are occasionally referred to by the editors with stringent comments. According to one statement a death occurs in every 2,723 administrations of chloroform, while a more recent writer, Mr. B. Carter, in *The Lancet*, August 7th, 1875, gives the proportion as 1 in 2,500 patients; and Mr. Carter goes on, in the same paper, to state that ether is in all respects as available and as effectual as chloroform, and that it is absolutely safe. He says: "I do not believe that it has ever destroyed life, nor do I believe it has any tendency to destroy life." I fear Mr. Carter is a prejudiced writer; other men are as competent to form an opinion as he. Further on I shall show ether is considered unsafe by certain writers, especially so in children. In *The British Medical Journal*, 6th November, 1880, you can read a letter from Mr. Jonathan Hutchinson, advocating the use of ether in preference to chloroform, and calling upon the editor to continue his advocacy until ether is universally used in all suitable cases. You see Mr. Hutchinson uses the words "suitable cases," admitting there are some patients who take chloroform better than ether. He prefers to administer chloroform to old people and young children. With all due respect to Mr. Hutchinson's opinion, were I to give ether at all it would be to old people owing to its recognised stimulating effect upon the heart. In the same journal Mr. Hutchinson's letter is followed by one from Mr. Jacob, of Leeds, also advocating the use of ether; but admitting that there are certain dangers attendant upon the administration of that anæsthetic. Immediately succeeding Mr. Jacob's letter is one from the administrator of anæsthetics at the Victoria Hospital for Children. He considers that in all inquiries relating to the respective merits of the two anæsthetics, chloroform has always been heavily handicapped; and submits that if ether or chloroform were given in cases of similar degree of risk, the mortality of the two would be found to be very much on a par.

Notwithstanding all the adverse opinions and writings, yet physicians and surgeons will rely upon their individual experiences. One has used chloroform in hundreds of cases without any bad results, and considers it safe and reliable; another had almost adopted the same conclusion after a long experience, when alarming symptoms or a fatal issue occurred in his own practice and shook his confidence. Still another has been alarmed by apparently dangerous phenomena resulting from ether, and has returned to chloroform with the idea that its danger has been exaggerated.

It is very odd that the first attack upon chloroform as an anæsthetic was made in America, the birthplace of ether; and all of you must have observed that in the many discussions upon the merits of the two anæsthetics nationality has entered largely into the debate—America v. England; and from the visit of Dr. Joy Jeffries, of Boston, to this country, in 1872, must we date the peculiar ether craze which has seized

the minds of some men. It is very remarkable that many of the fatal cases of death from chloroform inhalation have occurred in the practice of dental surgeons, private practice, or in some small institutions—a circumstance which would seem to show that there had been some fault in the mode of administration. A writer in *The British Medical Journal*, January 1st, 1876, claims:—"That by proper care chloroform is a sufficiently manageable and safe agent for use, and that it is not the chloroform which is to blame, but the mode of administration." With this opinion I fully concur. I always feel safe during an operation when the experienced house-surgeon is looking after the anæsthetic; and I must confess when an inexperienced person is *locum-tenens* I always feel uneasy until the operation is finished. I suppose many of you have read of a death from chloroform at one of the London hospitals? Just before the administration the house-surgeon was summoned to a coroner's court and was consequently absent during the operation; death occurred. Another death from chloroform has also been reported, where the experienced chloroformist was unavoidably absent during the administration. Here you see in the one case the experienced house-surgeon absent, in the other case the chloroformist otherwise employed; the chloroform may or may not have been administered by an experienced person. Comment is unnecessary; still they are deaths from chloroform.

Now let us consider some of the advantages and disadvantages of ether and chloroform.

*Advantages of Chloroform.*—In most cases its administration is agreeable to the patient; rapid in its action; complete insensibility produced; the entire absence of excitement when the insensibility is complete; little laryngeal or bronchial irritation; the easy maintenance of the anæsthetic influence, and less liability to cause vomiting.

*Disadvantage* is said to be the risk attending its administration. Death from the inhalation of chloroform may result, and probably does often result, from gradual paralysis of the respiratory muscles from the effects of the chloroform upon the respiratory centres.

There is another form of death from chloroform—cardiac syncope—the heart at one moment beating well, and the next moment stops. So that you see chloroform may cause death not only by arresting respiration, but also by its depressing action on the heart—this action on the heart being, in my opinion, the greatest disadvantage of chloroform, because when the respiratory centres are affected we can watch the change of breathing from its comparatively calm state, gradually becoming more shallow and stertorous; here by following out certain rules danger can be averted. But when death takes place from cardiac syncope, here there is no warning, the time between life and death being almost absent; so that, granting this cardiac syncope to be a serious disadvantage to the use of chloroform, we must take every precaution,



before commencing the administration, to limit the risk, by placing the patient in the recumbent posture, and attending to the other well-known details.

*Advantages of Ether.*—It is said that all records show it to be safer than chloroform—that is a matter of opinion. To my mind the greatest advantage of ether over chloroform which can be presented is, that although ether, like chloroform, may kill by arresting respiration, it does not destroy life by its depressing action on the heart—*i.e.*, it does not kill by cardiac syncope.

*Disadvantages of Ether.*—It is an unpleasant anæsthetic; it requires a long time to effect complete unconsciousness. The time required to get the full effect of the ether varies to a far greater extent with different people than in the case of chloroform. As a rule, it is twice as long, the quantity requiring to be inhaled being much greater. Other disadvantages are the restless excitement that often results from its administration, very different to the extreme quiet of chloroform unconsciousness; also the danger of ether vapour catching fire should any light be placed incautiously near the patient's mouth during inhalation. Dr. Neligan mentions, as one of the disadvantages, the persistent taste and odour experienced even for days by those to whom it has been administered; and Mr. Clover has drawn attention to the fact that the flow of saliva is considerably increased during the administration of ether and occasionally gives trouble.

*Is Ether really Safer than Chloroform?*—If we are to believe all that has been written on the point I believe that we must come to the conclusion that ether is the safer of the two anæsthetics; but, gentlemen, it is to obtain your individual opinions that I have introduced the subject. We still find many medical men very much in favour of chloroform, notwithstanding what has been written in opposition to it. I think we must all come to the conclusion that for operations upon young children and pregnant women chloroform is to be preferred to ether.

A few years since Dr. Tripier, of Paris, read a paper before the French Association for the Advancement of Science, and related cases in which the administration of ether to young children for surgical operations was attended by an arrest of respiration, and alarming symptoms ensued. Dr. Tripier instituted experiments upon young cats with ether, and found, as in young human subjects, an arrest of respiration often occurred. Older animals were less liable to the accident. He, therefore, considers anæsthesia by ether in young subjects as dangerous, and that chloroform for them should be preferred.

My opinion is that ether does not hold so good a position in the scale of safety as it did a very few years ago. I remember some six years since nothing but ether was administered at several English and Irish hospitals I visited, and I was very much surprised to find three weeks

since, whilst revisiting these hospitals, either chloroform in use or a mixture of ether and chloroform. I dare say you are aware that up to 1872 Mr. Spencer Wells used ether largely, and that he now either uses chloroform or bichloride of methylene. At the Samaritan Hospital for Women, London, I had the pleasure and advantage of seeing a few ovariectomies performed. Here the anæsthetic used was chloroform administered by Junker's inhaler; and from conversations I had with several medical men just returned from the great medical schools of the Continent, I learned chloroform is the anæsthetic chiefly used.

"In Germany chloroform has a less disputed sway than in any other country, and is now, according to Dr. Kappeler, of Germany, so far as he knows, exclusively used. In Austria the course pursued by Billroth is an index of the lack of full satisfaction with either ether or chloroform."<sup>a</sup> He is an advocate of, and constantly uses, a mixture consisting of three parts of chloroform, one part of ether, and one part of alcohol. This is the mixture which was so strongly recommended by the Committee of the Medico-Chirurgical Society.

Even in certain parts of America—the birthplace of ether—and notably in the Southern States, chloroform is preferred to ether. A paper bearing out this statement has lately appeared, written by Dr. Chisholm, of Baltimore.<sup>b</sup> This confidence in chloroform seems to be based upon the experience of surgeons with it in the Confederate Army, and in the Northern States the warmest advocates are surgeons who have had large experience during the American War. According to Sedillot and Malgaigne, ether has never succeeded in supplanting chloroform in France. Gross, of Philadelphia, prefers chloroform.

Why, gentlemen, have such men as Spencer Wells, Bantock, Billroth, Gross, and others, given up the use of ether, and adopted either chloroform or a mixture of chloroform and ether?

In Scotland, as we should naturally expect, chloroform is the anæsthetic in common use, and has a strong advocate in Professor M'Leod, of the Glasgow University. Dr. M'Leod, in *The British Medical Journal*, January 1st, 1876, lays down some excellent rules regarding the administration of chloroform, and goes on to state:—"He believes a good many of the deaths under chloroform have apparently been due to patients, suffering from heart disease, not being completely insensible when the operation was performed, and the shock killing them. Here," he says, "the chloroform is blamed, whereas what was really wrong was that it was not sufficiently pushed." He also states he never measures the amount of chloroform poured on the sponge or towel, simply watching the effects, and considers more deaths are due to too little than to too much chloroform being given. In his paper he alludes to a very

<sup>a</sup> American Journal of Medical Sciences. July, 1880.

<sup>b</sup> American Journal of Medical Sciences.

important point—namely, always to administer the chloroform in the recumbent posture. With this opinion I think we must all agree, as you are aware a large proportion of the deaths from chloroform have occurred in the practice of dentistry, and chloroform is generally administered by dentists when the patient is in the sitting posture.

Bearing out Dr. M'Leod's opinion regarding the shock killing the patient, not the chloroform, a letter has just appeared in *The British Medical Journal* by an Edinburgh professor. When speaking of the sudden arrest of the heart's action from reflex irritation during an operation, he says:—"The treatment of the sudden arrest of the heart's action from reflex irritation should consist in boldly pushing the administration of the chloroform, in the hope that relaxation of the spasmodic contraction of the heart will speedily occur." My idea is that chloroform is perfectly safe when administered with the precautions advocated by the Chloroform Committee of the Medico-Chirurgical Society in 1864, and, in addition, carefully adhering to the rule always to administer the anæsthetic in the recumbent posture. The relative advantages of ether and chloroform were carefully investigated by the Committee on Chloroform appointed by the Medico-Chirurgical Society (*Lancet*, July, 1868). In their Report they state that ether is slow and uncertain in its action, though it is capable of producing the requisite insensibility, and less dangerous in its action than chloroform. In many respects the action of ether is the same as dilute chloroform. The primary stimulating effect of ether on the heart's action is greater and of longer duration, and the subsequent depression of the heart's action is not so great as that produced at the same degree of insensibility by chloroform. On the whole, however, the Committee concur in the general opinion which in Great Britain has led to the disuse of ether as an inconvenient anæsthetic. The Committee found a mixture of ether and chloroform to be as effective as pure chloroform. This Report was written in 1868, and it was in 1872, subsequent to the visit of Dr. Jeffries to this country, that ether suddenly came into vogue. The Committee suggested for use a mixture composed of chloroform two parts, ether three parts, and alcohol one part, on the ground that ether and chloroform blend uniformly when combined with alcohol, and the constituents escape equally in vapour. The mixture of ether and chloroform I have lately seen used with good effect; the mixture is now used at the London Ophthalmic Hospital—not ether alone.

I now wish to introduce a few words relative to the statistics of the administration of the two anæsthetics. Some deaths have, no doubt, occurred at Guy's Hospital, London, during the administration of chloroform, but here it was given 12,000 times before any serious accident occurred. In the Crimean War it was given 25,000 times without a death, and during the American War 7 deaths occurred with 120,000

administrations. Professor Andrews, of Chicago, in 1870, collected from the different American and European hospitals the statistics of 117,078 cases in which chloroform was used, with 43 deaths. Of 92,815 cases of etherisation 4 died, and a mixture of chloroform and ether was employed in 11,176 cases with 2 deaths. Professor Gross, of Philadelphia, has given it upwards of 8,000 times without a death. Syme gave it about 6,000 times without any serious occurrence, and Professor Simpson is said to have met with but one death in all his immense experience. Professor Nussbaum, of Bavaria, in upwards of 15,000 administrations, never lost a patient; Billroth has given it successfully upon 12,500 occasions. It is calculated it has been administered in Belfast, including hospital and private practice, upwards of 7,000 times; and up to the present, I am happy to say, no death has occurred. Long may we have this story to tell.

It is extremely odd that no writer has made any attempt to present the total number of deaths which have occurred under ether. This death-rate is a very important matter when chloroform is under consideration, but of no consequence in regard to ether. Still, Turnbull in America, Kappeler in Germany, Perrin and Lallemand in France, have reported not a few deaths resulting from the inhalation of ether (see *American Journal of Medical Science*, July, 1880). Kappeler gives a class of deaths occurring after the administration of the ether is over, and refers to the investigations of Lallemand, Perrin, and Duroy, showing that ether is retained a longer time in the organism, and has therefore a decidedly more prolonged operation. As regards the deaths from ether Dr. Kappeler says:<sup>a</sup>—"We are as little prepared to state in figures the dangers of ether as those of chloroform, since neither the number of deaths from it nor the number of administrations are known, and the attempts made to state the proportion of deaths to administrations are mostly the product of the bitter contest—ether *versus* chloroform."

From these favourable reports and statistics, which I have just read, I think we may conclude that the time has not yet come when chloroform will be laid aside; and I believe its use will continue so long as there is the existing diversity of opinions regarding its merits. Hence it must be now, as it has been, the earnest wish of surgeons and physicians to diminish the attendant danger; and this leads me to speak of a few of the more prominent remedial measures and preventions to nullify ether and chloroform poisoning.

In threatened death from chloroform the means which we most frequently rely upon are—(1) Drawing forwards the tongue with tongue-forceps; this method was first introduced by Mr. Lister, but it is now considered you gain more by drawing forwards the inferior maxilla; by so doing the muscles which connect the lower jaw with the larynx

<sup>a</sup> American Journal of Medical Science. July, 1880.



and os hyoides are drawn upon and open the larynx ; it is said you gain a freer opening of the larynx by this method ; at the same time as you draw forward the tongue or lower jaw it is recommended to place the patient upon his left side. (2) Nélaton's plan.<sup>a</sup>—Inverting the patient so as to lower the head and determine a flow of blood to the brain. (3) Artificial respiration, by Sylvester's, Marshall Hall's, or Howard's methods.—When practising artificial respiration you can place a sponge saturated with hot water over the heart. This is recommended by Dr. M'Leod, of Glasgow.

In threatened collapse from chloroform, and when the heart's action flags, ether has been injected hypodermically with marked success. Lately Dr. Moinet, of Edinburgh, has spoken highly of the subcutaneous injection of digitaline as a cardiac stimulant in conjunction with artificial respiration.

The galvanic battery is also occasionally used to avert impending danger ; but those of you who have been reading *The British Medical Journal* lately must have noticed a letter from Professor Schafer, of University College, on the action of the galvanic current when applied to the cardiac region. He says :—"The effect of direct stimulation of the heart is so opposite, according to the part which happens to be brought under the direct influence of the excitation, that it is no exaggeration to say that the treatment is at least as likely to arrest a beating heart as to set an inhibited one in activity." So that, taking into account this celebrated physiologist's experiments, I consider we must not rely too much on galvanism. In this recent letter you will also observe that Professor Schafer speaks very highly of a hypodermic injection of atropine in all cases in which chloroform is about to be administered. He states that it is well known that atropine paralyses the cardiac inhibitory apparatus, and since it is probable that death in these and similar cases results from a stimulation of this apparatus, either directly by the drug, or it may be, in some instances, in a reflex manner, by the stimulation of abnormally excitable afferent nerves during the actual performance of the operation, there seems good reason for the employment of atropine. He has also performed a number of unpublished experiments to prove the value of atropine as an antidote to the cardio-inhibitory effects of chloroform ; and he is of the opinion that atropine should be injected subcutaneously in all cases of anaesthesia by chloroform as a preventive. As regards the previous subcutaneous injection, a letter has just appeared in *The British Medical Journal*, written by Dr. Muro, of Manchester, speaking of the beneficial effects of the atropine injection in chloroform inhalation. He has also performed a number of experiments, which he states he forwarded to the Committee of the British Medical Association, but they

<sup>a</sup> The late Mr. S. M. Bradley, of Manchester, has reported cases treated successfully by this plan.

did not publish the results of his experiments for reasons best known to themselves.

Dr. Muro is of the opinion that atropine administered previously to the giving of chloroform is a powerful heart protector, making it impossible for the latter to kill, even when administered with that intention.

The modification of the ordinary course of chloroform anæsthesia by the preliminary injection of morphia deserves attention. This is known by the name of the "mixed narcosis," and was first resorted to by Professor Nussbaum, of Bavaria. It is claimed for the "mixed narcosis" that it is especially adapted to prolonged operations, rendering a far less quantity of chloroform necessary—the anæsthesia being continued with far less repetition of inhalation; that the stage of excitement is lessened, and that thereby the dangers of anæsthesia are diminished. It is recommended to make the hypodermic injection of one quarter grain of morphia twenty minutes before administering the anæsthetic, because if made immediately preceding the use of the anæsthetic the stage of excitement is increased.

In *The Lancet* of December, 1877, you can see papers upon the "mixed narcosis method," and details of operations performed by Mr. Marshall and Dr. Sidney Ringer.

Mr friend, Dr. J. F. Wales, informs me that this method is frequently resorted to at the Leeds Infirmary. It appears that none of the advantages of chloroform-morphia attach to ether-morphia narcosis.

Dr. Kappeler<sup>a</sup> gives his experience with twenty-five cases, and states that the combination of these two agents is rather injurious than beneficial.

The medicinal agent which seems to promise most as an antidote to chloroform and ether poisoning is the nitrite of amyl, since physiological experiments have developed an antagonism between the effects of nitrite of amyl and chloroform. While chloroform impairs reflex excitability and produces contraction of the cerebral vessels, nitrite of amyl restores this excitability and causes their dilatation. Into the enlarged vessels the blood freely enters, and a rapid circulation follows.

Mr. Bader, Ophthalmic Surgeon to Guy's Hospital, in *The Lancet*, May, 1875, gives the results of his experience with the nitrite of amyl. He says:—"In three or four minutes after taking three drops of nitrite on sugar the blood-vessels of the retina, especially the veins, become enormously dilated and gorged with blood, leaving no doubt as to the simultaneously existing cerebral hyperæmia with increased circulation of blood."

He further says:—"The most striking effects of the nitrite were the quick restoration of breathing, a good colour, and the rapid appearance of sickness."

<sup>a</sup> American Journal of Medical Sciences.

As to the essential mechanism of this, Dr. Robert Pick (*British Medical Journal*, February 26, 1870) considers that the following conclusions are established by recent experience:—

1. Amyl nitrite produces a direct paralysis of the vascular wall.
2. The effect of the drug must be peripheral; but whether the smooth muscles themselves, or the terminal ends of nerves in these, or, finally, certain hypothetical peripheral ganglionic cells, are the points of attack, is unknown.

Dr. William Dabney, in the “Transactions of the Medical Society of Virginia, America,” reports a series of experiments upon cats and dogs, showing the value of nitrite of amyl in cases of threatened death from chloroform and ether.

Dr. M. Schüler has written in *The Berlin Clinical Journal* a series of experiments performed with the nitrite upon rabbits. He removed a small portion of the skull, leaving the dura mater intact. He found, when chloroform was inhaled for a short time, a diminution of size of the arteries of the pia mater, then of the veins, took place. This is accompanied by a corresponding decrease in the pulsations. Soon follows an increasing relaxation of arteries and veins, and at last marked venous stasis. As a result of the venous condition of the blood, the arteries become speedily of a darker hue. The inhalation of the nitrite of amyl promptly removes the effects of chloroform on the vessels of the pia mater. The arteries dilate and become of a bright colour, the veins become of a clearer hue, and the respiration which had been embarrassed grows easier and more frequent. He also states that the reflex excitability which has been destroyed by chloroform narcosis is soon fully re-established under the influence of the nitrite of amyl.

I think these experiments show that in nitrite of amyl we have an agent which will prove of great service when disagreeable symptoms show themselves during the administration of chloroform and ether.

I have thus, gentlemen, in a feeble manner endeavoured to put before you a few practical observations regarding two very important anæsthetics. I had originally intended taking up the subject of anæsthetics in general, and introducing to your notice bichloride of methylene and the two new agents—dichloride of ethidene and bromide of ethyl; but I feared the paper would be too long, and I feel certain your patience is already exhausted.



## CLINICAL RECORDS.

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*Malarial Paralysis, as observed in the West Indies.* By LOUIS EDWARD DELMEGE, L.R.C.S.I., L.R.C.P. Edin.

I WOULD wish to draw attention to a disease which has frequently attracted my notice since I took up my residence in Jamaica. The disease I allude to is one very similar to that so ably described by Duchenne as progressive locomotor ataxy, but still it differs from it in several important points. I will now state the general symptoms of the cases which I have seen and treated. There is a general blunting of all the senses—deafness, impaired vision, &c. There is almost complete loss of muscular coordination. If patients suffering from this disease are made to put their heels together and look upwards, they immediately lose their equilibrium. Then, again, the gait is irregular—they cannot walk in a straight line. In moving about they use their lower extremities spasmodically, bringing the heels down on the ground first, and there is total absence of tendon reflex. I have noticed in most cases great irritability of temper. The disease is common out here, and I have not the slightest hesitation in saying that it is due altogether to malarial influences, as the more malarious the district, the more frequent is the disease, and it is more usual after the rainy season, and is, moreover, marked by periodicity, the symptoms being aggravated at a certain hour every day. It occurs in males and females in nearly equal proportions, and is commonest about middle life. If a native suffering from this disease is asked what is the matter with him, he will describe his affection as “numbness” and “cramps,” and complains that he feels the ground soft under his feet. I have noticed in a few cases that the skin assumes even a darker hue than is natural, the palms of the hands being sometimes perfectly black, which is not usual when a negro is in good health. The disease, under proper medical care, is very amenable to treatment. The medicines I have found most efficacious are Fowler’s solution, in combination with acetate of potash, and compound tincture of cinchona, and a dose of quinine, say ten grains, at a stated time daily. Of course I do not tie myself down to these medicines alone. I may here state that patients suffering from this disease are habitually constipated. This is more easily combated by small doses of castor-oil. The diet, I consider, should be nutritious, but non-stimulating, and I have frequently observed a diet containing fresh fish to prove very good.



I will now state a few cases which I have seen and treated :—

CASE I.—J. M'L., female, aged forty years, unmarried, colour brown, was admitted into the Colonial Hospital, Kingston, Jamaica, May 23rd, 1880. Patient was brought to hospital in a stretcher, being quite unable to walk. Complains of great pain in back, which is intensified by pinching lower extremities. Vision is imperfect; hearing much impaired. States that she has startling pains in her "lower limbs" at night; says that before she lost power over her "lower limbs" she used to have "continual fever" (ague). Tendon reflex is absent. Patient is constipated; has lived for a long time in a very malarious district. In this case there is marked periodicity, all the symptoms being exacerbated about noon daily. After having been under treatment for two weeks, she was able to move about a little. Pains in the lower extremities had nearly all passed away, and in one month and two days after admission she requested her discharge from hospital, saying that she felt much better, and would be able to walk to her home, a distance of about eight miles.

CASE II.—A. S., female, aged thirty years, unmarried, colour black, was admitted into the Colonial Hospital, Kingston, Jamaica, May 1st, 1880. Complains of "cramps" in her limbs, and "heaviness" in her joints, with occasional darkness of vision; also of a tingling sensation in her feet. She is very deaf, and unable to walk without some assistance. States that she has been ill for over fifteen months; is very irritable in temper; says that since her illness she has noticed that her skin has become much darker in colour. The palms of her hands are quite black. She can stand as long as her eyes are fixed on the ground, but if she looks upwards for a moment she staggers. Before her present illness commenced, had continual attacks of ague. Gradually, while under treatment, all her symptoms subsided, and patient was discharged, Oct. 21st, after having been in hospital five months and twenty days. She was then able to walk about; had no tingling sensation in her lower extremities; hearing was very much improved, vision perfect, and the darkness of the skin had passed away.

CASE III.—H. K., male, aged thirty-five years, married, colour black, was admitted into the Colonial Hospital, Kingston, June 17th, 1880. On admission he complains of "numbness" and "cramps." Patient is deaf; eyesight much impaired; is able to walk a little; coordination is imperfect. When walking he keeps his eyes intently fixed upon the ground, bringing the heels down first; is afraid to look upwards, because he says he will at once fall down. Tendon reflex is absent. Complains that he feels as if "needles" were sticking into his legs. Voice is of a peculiarly high-pitched tone. Patient is constipated. There is no loss of sensation over any part of his body. Temper is irritable. After a

stay of thirty-five days in hospital patient was discharged recovered; he could then walk steadily and quickly. There was no necessity to keep his eyes fixed on the ground when walking. All pain and pricking sensation had disappeared from lower extremities.

I should mention that though the negroes describe this disease as "numbness" and "cramps," there is no anæsthesia.

I will now contrast the true locomotor ataxy with the above disease that I have described. The disease is due to malaria; it is not progressive, and is marked by periodicity, but it is readily amenable to treatment. There is no atrophy of posterior columns of the spinal cord, but rather simple congestion, and it occurs in males and females in almost equal proportions. I do not know whether this disease has been brought before the readers of *The Dublin Journal of Medical Science*. If it has, I beg to apologise for having intruded it on their notice.

#### ON THE COMPOSITION AND THERAPEUTIC ACTION OF PILOCARPIA.

P. ALBERTONI has made an extended series of experiments on man and animals, and arrives at the following conclusions:—1. The action of the pure alkaloid (pilocarpia) is different from that of its salts (nitrate or hydrochlorate). 2. The action of salts of pilocarpia is purely myotic (contraction of the pupils and muscles of accommodation). 3. The action of pure pilocarpia is a double one, both myotic and mydriatic, the former prevailing in intensity. When pure pilocarpia exerts its action on the eye, the irritant effects are extended to two classes of nerves (motor oculi and sympathetic), the former being affected first with resulting myosis and contraction of muscles of accommodation. In the further course of its action the sympathetic nerve more slowly, but also more permanently, comes under its influence, while the myosis disappears and mydriasis (dilatation of the pupil) follows, while the contraction of the muscles of accommodation continues in the absence of any antagonistic influence. 4. Pure pilocarpia contains, therefore, two principles differing in their action, although their isolation has not yet been effected by the author for various reasons. The myotic action of salts of pilocarpia is consequently more important than that of the pure alkaloid, because in the latter case it is weakened by the mydriatic effects. 5. The action of pilocarpia as well as that of its salts is effected through irritation of the peripheral terminations of the ciliary nerves, and in the manner that the myotic principle affects only the peripheral terminations of the motores oculi, while the mydriatic principle affects those of the sympathetic. Myosis produced by pilocarpia, consequently, does not result from paralysis of the sympathetic.—*Vienna Med. Chir. Rundschau*, Feb., 1880; and *Therapeutic Gazette*. [Cf. *Dublin Journal of Medical Science*, Dec., 1880, p. 486.]

## ON THE MEDICAL KNOWLEDGE OF THE ANCIENT IRISH.

By THOMAS MORE MADDEN, M.D., M.R.I.A.; Obstetric Physician to the Mater Misericordiæ Hospital, &c.

SOME years ago I published in this Journal a paper on the "Probable use of Anæsthetics in Ireland at a Remote Period," and I now purpose to bring under consideration a Celtic Materia Medica of the thirteenth century and some other medical manuscripts in the collection of the Royal Irish Academy which I then referred to.

To render these extracts intelligible, a preliminary account of the leechcraft of the ancient Irish is necessary. The materials for this are somewhat scanty and difficult of access, being chiefly contained in Celtic MSS., translations from which were furnished to me by a well-known Celtic scribe, the late Mr. Long, of the Irish Academy, and in the manuscripts of his predecessors in the Academy, Dr. O'Donovan and Mr. O'Curry.

Besides these documents, those interested in the subject will find some valuable matter in Mr. Windale's papers in the Kilkenny Archæological Transactions, and still more in the late Sir William Wilde's learned dissertation in the first volume of the Irish Census Reports (1851), to which should be added a few fragments of Gaelic medical folk lore scattered through the Transactions of the Ulster, Kilkenny, and other antiquarian Societies.

The condition of the learned professions is a fair index of the civilisation of any country, and, measured by this standard, our forefathers have left no cause for shame. Their ecclesiastical learning is chronicled in our earliest annals; their architectural skill has left enduring memorials in the ruined churches and abbeys thickly strewn over the land; their jurisprudence, as recorded in the Brehon Laws, was as elaborate as that of other European countries at the same period; and, finally, in the surviving fragments of their ancient medical manuscripts may be discovered the evidence of considerable erudition.

The admixture of superstitious observances with efficacious medical treatment, which is noticeable in most of these manuscripts, is but an illustration of the general connexion between primitive medicine and magic, of which Pliny says—"Natam primum e medicine nemo dubitat." So nearly related were these two arts that by the Greeks the same word was used to describe a remedial drug as well as a substance prepared with magic ceremonies for purposes of incantation. In Homer we find

repeated examples of both uses of the word *φάρμακον*; and in like manner the North American Indian to this day uses the same word to express the ideas of physic and of magic—his “medicine-man” combining the functions of magician and soothsayer with those of physician.

Nearly all diseases were attributed by the Celtic Irish to what they termed “*Meillt-eoireacht*,” or “fairy-strokes;” and a similar idea prevailed amongst other primitive races. The earliest records of medicine extant are the Hindu Vedas, some of which are asserted to have been written in the fourteenth century before the Christian era.<sup>a</sup> In several of these—as, for instance, the Charaka and Sushruta—we find proof that sickness was regarded by the Hindus as a supernatural visitation; and so strong was this belief—that disease was a punishment for guilt incurred by the patient in either his past or present state of existence—that Strabo tells us “that in the time of Alexander it was considered disgraceful for the Brahmans to be sick, and they put an end to themselves when they fell into that calamity.”<sup>b</sup>

The Singhalese ascribe disease to supernatural agency of a more powerful as well as a more malignant character than the “fairy-strokes” of the Irish medical legends; and the “*Yakadura*,” or devil-dancer, to whom they resort when sick, is a very different character from the harmless Irish “fairy-doctor,” being considered, as described by Knox two hundred years ago,<sup>c</sup> and in our own time by Mr. Hardy,<sup>d</sup> “as a special servant of the evil principle to whom he is devoted, and by whose ‘*afflatus*’ he is supposed to be possessed.”

Similar superstitions infected the practice of medicine in all other countries, notwithstanding their condemnation by successive ecclesiastical councils. To the present time remedies traceable to the earliest traditions connected with the infancy of medical science are in popular vogue. Thus, in those parts of Spain described in my work on “*Change of Climate*,” I can speak from long personal observation of the existence of some of the medical superstitions recorded by Pliny. Hydrophobia is there still popularly treated by infusion of dog-rose, as he recommends (*His. Nat.*, Lib. VIII., c. 41). To the same authority may be traced another instance of the doctrine of signatures in the wearing of purslane in cases of relaxed uvula; and, not to occupy time by mentioning many other similar instances, the faith of the Andalusian peasantry in the viper broth of our forefathers as a sovereign remedy for nearly all chronic complaints, is attested by the crowds who frequent the pleasant suburb

<sup>a</sup> Asiatic Researches. Vol. VIII. P. 489.

<sup>b</sup> Strabo. Geography. Lib. XV.

<sup>c</sup> Knox. Historical Relation of the Island of Ceylon to the East Indies. Folio. London. 1681.

<sup>d</sup> Hardy. Jubilee Memorials of the Wesleyan Mission, South Ceylon. 1814–1874. P. 53.



of Chiclana, close to Cadiz, for the sole purpose of drinking an unsavoury snake broth, for which this place is famous.

The tarentella of Naples is another survival of these therapeutic superstitions; and though on my visit to Taranto I did not succeed in witnessing a case of *tarantismo* or its harmonic treatment, I had whilst there proof that neither are extinct.

We can hardly take up a French newspaper without finding evidence that similar methods of cure are practised amongst the French peasantry. And even in our boasted land of civilisation, the practice of rustic herb-doctors—of whom there are still not a few in England—is largely interspersed with observances evidently of Druidical origin.<sup>a</sup>

Much light has been thrown on the analogies between the early Celtic and Saxon systems of medicine by the volumes of “Saxon Leechdoms”<sup>b</sup> published some years ago. On comparing these with the Celtic MSS. we are about to refer to, it would seem that a more extensive acquaintance with classical medical literature prevailed in Ireland at a very remote date than existed in England.

Several of the ancient Scottish medical usages described by Mr. Dalzell<sup>c</sup> were identical with those that prevailed in Ireland. For instance, crystal “adder-stones,” such as those contained in the museum of our Academy, were used in Scotland, as in Ireland, by patients suffering from whooping-cough, nightmare, and other complaints. The head of a frog put into a child’s mouth, and held there until the unfortunate reptile was killed, was considered a remedy for the thrush. A shrewmouse hung up alive and left to wither away was esteemed efficacious in the treatment of paralysis, which was ascribed to this animal having crawled over the affected limb. The number 9 entered as largely into the Scotch as into the Irish medical superstition, and did time permit we might easily enlarge on the close resemblance between the medical customs of the two countries.

These observations on the analogies between the primitive medical usages of other races with those of this country may serve as an introduction to the consideration of our ancient Celtic medical manuscripts, in the earliest of which we find comparatively little trace of the popular superstitions recorded in the “Saxon Leechdoms;” but in more recent documents we find evidence that many of these had been imported into Ireland.

A large collection of ancient Irish manuscripts was discovered in the Convent of St. Gall, in Switzerland, by Dr. Keller of Zurich. These were brought under the notice of Irish antiquaries by the Rev. Dr.

<sup>a</sup> Pettigrew on Superstitions connected with the Practice of Medicine. P. 18.

<sup>b</sup> Leechdoms, Wort-cunning, and Starcraft of Early England. Published by direction of the Master of the Rolls.

<sup>c</sup> The Darker Superstitions of Scotland. By John Dalzell, Esq.

Reeves in *The Ulster Journal of Archæology*, and amongst them are Celtic versions of the works of Hippocrates and Galen, written in the eighth century.

The late Dr. Todd translated a specimen of one of the medical charms referred to in Dr. Keller's paper. He says, "The lines are purely Irish, and are probably as old as the tenth century." They commence:—"A preservation for the dead, the living, for the want of sinews, for the tongue-tied, for swelling in the head, of wounds from iron, of burning from fire, of the bite of a hound; it prevents the lassitude of old age, cures the decline, the rupture of the blood-vessels, takes away the virulence of the festering sore, the poignancy of grief, the fever of the blood—they cannot contend with it. He to whom it shall be applied shall be made whole. Extolled be the elixir of life bequeathed by Diancecht to his people, by which everything to which it is applied is made whole."

Dr. Todd observes, "Elixir of life (*glancid*) signifies a sovereign remedy, literally 'health healing.' Diancecht is a celebrated personage in Irish history, to whom the ancient Irish physicians attribute all their traditions. He was the physician of the Tuatha de Dananni, a colony of foreigners who landed in Mayo in the year of the world 2737. To these the Irish attributed the knowledge of all arts and sciences, and tradition has invested them with the character of magicians, probably from their superior civilisation. They came to a battle, in which they defeated the former inhabitants of the county, at a place called Moy-Tuiredh, near Lough Measg, where it is said that Diancecht, the physician, during the battle dug a pit or bath, which he filled with a decoction of herbs. Into this he plunged such of his people as were wounded in the battle, who were immediately restored to perfect health, and sent back to renew the fight."<sup>a</sup>

The social status of the medical attendant of an Irish sept is not easily defined. In the third volume of *The Ulster Journal of Archæology* an abstract is given of some documents showing the positions of the various members of a Celtic chieftain's household. The first of these papers is entitled "A Miscellaneous Collection, relating to Ireland, principally in the time of Elizabeth," and consists of letters addressed to Lord Burleigh, in 1594, by Dr. Hammer, who was chaplain to Lord Ormond. Amongst these rough notes—"Mores gentium," as the memoranda are headed—occur the following details as to the apportionment of the several parts of the oxen and sheep killed for an Irish chieftain's family. From this document we learn that of every cow killed the kidneys were assigned to the "physitian," and of every sheep the shoulders were given to the "astronomer." "The last name," continues the writer in the *Archæological Journal*, "might be supposed to be

<sup>a</sup> The Ulster Journal of Archæology. Vol. VIII. P. 303.

intended to conceal one of those foreign priests whom recusants maintained in their castles under the name of professors of medicine, as the celebrated and ill-fated Jesuit, Champion, was secreted by Lady Kildare.”<sup>a</sup> This aspiring title was, however, merely a pompous one for the family “physitian,” for astronomy, necromancy, and medicine were cultivated as kindred arts by the pagan Irish, and also by the English, as recently as the time of Chaucer, whose “Doctour of Physicke” was grounded in magic and astronomy, as well as in medicine and surgery. The presence of one qualified to cure the wounded was evidently constantly needful in a chieftain’s house, and the hereditary doctors of Gaelic clans and great Anglo-Irish families generally had lands assigned to them for their support. Ballyally Castle, the curious siege of which is published by the Camden Society, belonged to the Neillans, who were physicians to the O’Briens. Desmond’s medical *ollav* had a townland, and a town house in Youghal; and, by deed dated 1473, Lord Courcy granted Rotheric, son of Maelmora M’Beha, physcian, half a townland in Rinrone, in the highway called Glanquill, to hold free, “with medicinal dignity, liberty, and profits,” throughout his lordships of Rinrone and Kinsale.<sup>b</sup> As recently as the seventeenth century we find that the fame of the native Irish physicians was not confined to their own country. Thus Van Helmont refers to them:—“Memini namque Magnates Hiberniæ, dare agrum domestico medenti non quidem qui ab Academiis institutus sed sanaret ægros. Habet nempe is librum, ab altavis sibi relictum remediis resertum. Adeoque libri hæres, semper agri illius hæres est. Codex iste, signa morborum depingit ac remedia vernacula, feliciusque sanatur infirmi Hyberni, ac longe fortiores sunt, quam Itali, qui pagis singulis, suas habent Medicastros, è cruore miserorum viventes. Dixi ergo mihi, Quis te vanis error; quod magni momenti futurum proximo sis meditatus, si tuas disputatiuncula, Academiae irriserint, et pedibus calcaverint; et licet non in finem gloriolæ tuæ scripseris, vana tamen sunt omnia in manibus hominum.”<sup>c</sup>

The medical knowledge of the native Irish was chiefly derived, as Van Helmont observes, from family manuscripts, which were handed down from father to son, their possession constituting the owner’s sole title to practise physic.

A similar system exists in some parts of India, where the families who claim the right of practising medicine do so in virtue of their exclusive possession of certain ancient manuscripts (or *Shâstras*), which are so

<sup>a</sup> S. P. O. 1581.

<sup>b</sup> Cotton MS. Titus, B. XI., 230. Cited in Ulster Archæological Journal. Vol. III. P. 124.

<sup>c</sup> Johannis Baptistæ van Helmont. In Confessio Authoris. Opera Omnia. P. 13. Editio Francofurte. 1707.

jealously guarded by their owners that they are hardly ever allowed to be sold, or even copied.<sup>a</sup>

In Scotland, also, the profession of the healing art was in some instances hereditary. Thus, we are told by Mr. Dalryell, "A pulmonary disease called 'Glachach,' is also called 'the Macdonalds' disease' by the Highlanders, because the gift of curing it by the touch, accompanied by a formula of words, is ascribed to certain families of that name."<sup>b</sup>

In the Celtic manuscripts in the library of the Royal Irish Academy we have abundant evidence of the character of the leechcraft of the native Irish. The late Mr. O'Curry, in his unpublished "Catalogue of the Numbers and Contents of Messrs. Hodges & Smith's Collection of Irish Manuscripts," described several of these documents. In the oldest of these, that entitled "*Medicina Antiqua*," the following entry occurs:—"The age of the Lord when this book was made was a thousand years and three hundred years and twice twenty years and twelve years more. This book was finished in the year that Shane Oge, the son of Cu-aithne, was killed, and it was written in the house of the son of Dermod O'Meagher. May the Merciful God have mercy on us all." Immediately after these lines are the words, in a more modern hand: "I am Richard Mertogh."<sup>c</sup>

Mr. O'Curry says of this manuscript:—"It appears to me to be a commentary on the works of Galen, Hippocrates, and others, in the course of which the author quotes largely in Latin from the original works; compares the opinions put forth in them, contraverting or approving of them as the case may be. Folio 18 b., page 1, treats of the nature and location of pulmonary affections; the brain—the nerves that issue from it; the heart, &c. Folio 19 treats of the organs of nutrition, and first of the stomach—its functions, the mode of digestion, &c. Folio 20 treats of the organs of generation in man. Folio 21 treats of the womb and generative parts in woman. The next chapter commences:—I have brought together here practical rules from other writings, in the honour of God, in mercy to the Irish people, and for the instruction of my pupils, and out of friendship to my friends and my tribe, from Latin books into Irish—viz., on the authority of Galen, and from Hippocrates' Book Prognosticorum."<sup>d</sup>

So far the late Mr. O'Curry's manuscript; but, in a work which was published several years afterwards, the continuation of this passage was thus translated by the same learned scholar:—"These are things gentle, sweet, profitable, of little evil, which have often been tested by us, and by our instructors. And I pray God for those to whom this will come,

<sup>a</sup> Dr. Wise. Commentary on the Hindu System of Medicine. P. 5.

<sup>b</sup> Dalryell (John G.) The Darker Superstitions of Scotland. P. 61.

<sup>c</sup> O'Curry (Eugene). MS. Catalogue. Royal Irish Academy's Library.  $\frac{23}{H}$  11.

<sup>d</sup> O'Curry's MS. Catalogue. Library Royal Irish Academy. Vol. II. P. 345.



and I lay it as a load and as injunction on their souls, that they extract not poorly, and that they fail not for want of the practical rules; and particularly if they gain nothing by doing it regularly (or devoutly). I implore every doctor, at the beginning of the work (of curing), that he remember the Father of Health (God), that the work be finished prosperously; and let him not be in mortal sin; and let him beseech the patient not to be so either. And let him implore the Heavenly Father, who is the Physician and the Balsam-Giver (*Slanicidh*) above all for the diseased, to end his work prosperously, and to save him from shame and discredit at that time.”<sup>a</sup>

“It may be observed,” continues Mr. O’Curry, “that there are many silly and superstitious recipes given in the above *Practical Rules*, but whether they properly belong to the collector or to the original writers I know not. Fol. 88 treats of the menstrual discharge, and is the concluding article of a treatise on Midwifery. Same folio, page b, treats of the falling down of the womb, of abscesses and ulcers in the womb. Fol. 89 treats of irritation of the womb, of barrenness in women; the mode of ascertaining whether the cause of barrenness be with the man or with the woman; rules to be observed by women that they may bring forth male children; of women who wish not to conceive. Fol. 89 treats of childbirth; children born feet foremost; of the manner of preparing women for the birth of a dead child; of the after-birth; of flooding; of difficult labour. Folio 90 treats of the preparation of women for labour; of the formation of the embryo, the several stages of its maturity, and of the nursing of the infant when born.”<sup>b</sup>

Amongst the unpublished papers of the late Dr. O’Donovan in the Academy is one entitled “Contents of a Fragment of an Irish Medical MS. of A.D. 1352, with Remarks on the Peripathetic Philosophy.” Dr. O’Donovan’s paper is now bound up with the original Celtic text, entitled “*Medica Antiqua Ling. Hib. Codex Memb., 1352.*”

The Irish writer’s description of the stomach is as follows:—“The stomach is cold and dry, long and round, made up of fibres and membranes. The reason of its being cold and dry is in order to fortify the *vis retentionis*, which is cold and dry: it is round, because Nature does not wish that there should be any cavity or receptacle for dirt or excrement in it which might be injurious to the body; it is long, in order that it might expand or contract according to the quantity of food in it contained; it is formed of fibres, in order to have the power of retaining food for digestion.”

The process of digestion is thus explained:—“At the completion of the first digestion the mass of chyle passes into the intestine called

<sup>a</sup> O’Curry’s Translation, furnished to the Irish Census Commissioners. 2nd Report. Part V. Vol. I. P. 31.

<sup>b</sup> O’Curry. MS. Catalogue of the Academy Manuscripts. Vol. II. P. 346.

*duodenum*, which is a small straight intestine, and called *duodenum* because its length is twelve inches. From this the chyle passes to the intestine called *jejunum*, which is a small curved intestine found always empty in dead animals; and here a separation is made between the pure and gross parts of the chyle—the purer part passes through the small vessels that run from the intestines to the liver, and the unclean part passes into the intestine called *orbum* and *cæcum*, and from thence to the intestine called *ileum*, and from *ileum* to *colon*, and thence there are two passages to the intestine called *orbis*—one from the gall-bladder to convey bile to this intestine for increasing the expulsive force, and another from the spleen to convey melancholy to it, to strengthen the expulsive force also from its weight and *earthliness*. Colon is so called from ‘colando,’ to strain, for after the gross impure part is separated, or strained, from the pure it is ejected into this intestine; and from the intestine called *Longaon* it is expelled from the body.”<sup>a</sup>

The acquaintance of the ancient Celtic medical writers with foreign and classic medical literature is proved by several of their manuscripts. Thus, one of these, the date of which was fixed by Mr. O’Curry as about the commencement of the fifteenth century, begins with a literal translation of some of the Hippocratic treatises, with the commentary of Galen. In the same work are dissertations on the practice of physic, in which Avicenna, Galen, Hippocrates, and other writers, are largely quoted. The Celtic author of this work attached no small importance to the state of the urine as a prognostic and diagnostic, though some of his views on the subject would considerably astonish a modern urinary pathologist.

Some ancient popular medical traditions are still current in the south and west of Ireland. These, however, are rapidly dying out, for within the last thirty years a complete revolution—social, moral, and intellectual—has taken place in the character of the Irish peasantry. This change is not merely the result of the general diffusion of education of a kind entirely beyond the requirements of those to whom it is supplied, but is also traceable to the effect of the first disastrous famine period and the consequent exodus of the small farmers and labouring classes. These have been replaced by a generation better educated, perhaps, but ignoring or despising all old traditions. It is desirable, therefore, to collect any fragments of our popular leechdoms before they become lost in the course of the next few years. With the view of inducing others better qualified to do the same, I may refer to one or two of these existing medical superstitions.

Several years ago I visited a small farmer’s cottage in the mountains near Capure, with the dispensary doctor, to see a case of difficult labour,

<sup>a</sup> See the late Dr. O’Donovan’s MS. fragment of the contents of this treatise in (No.  $\frac{23}{F}$  19 of) the Manuscript Collection of the Royal Irish Academy Library.

and on examining the patient we found a piece of red worsted, in which a small pebble was secured, which had been fastened round her leg by the "handy-woman" in attendance. In Scotland a similar idea was acted on by rural midwives. Thus Pennant speaks of the "boird-stane" or "adder-stone," as it was called, which he says was employed "to give ease to women in childbirth, by being tied about the knee."<sup>a</sup> Mr. Dalzell quotes an old Scotch writer who records that "Margaret Stewart exhibited ane quhyt stane of crystall, guide for seik women in their travell."<sup>b</sup> The employment of crystal "adder-stones" in Ireland was extended to many diseases, such as the whooping-cough, as well as for the cure and prevention of cattle distempers. Vallancy, in his "Collectanea," speaks of the "water-stone which the Hibernian sorcerers used to throw into water to give it a medicinal virtue."<sup>c</sup> Cattle were supposed by the ancient Irish to be distempered by the spell of some enemy, and to cure such distempers they placed a crystal ball, called a "murrain-stone," in a running stream, over which they drove the infected beasts. The late Mr. Windell has described one of these stones, which had long been an heirloom in the family of the M'Carthy's of the Glen.<sup>d</sup> Another in the possession of the Marquis of Waterford is preserved at Curramore, and I know a gentleman whose tenants relied on this murrain-stone within the last twenty years.

In the parish of Killinagh, in the county of Cavan, a family of small farmers have long had the reputation of possessing a cure or preventive for hydrophobia. This is preserved as a heirloom in the family of the M'Goverans, of Corredrassagough, and is handed down in much the same way as was the leechcraft of the ancient Irish hereditary physicians. Some years ago a connexion of mine residing in that county gave me the particulars of a case in which a lad having been attacked by a rabid dog, whose bite had been followed by hydrophobia in some cattle, was sent by his father to this M'Goveran, who undertook his cure only on the condition that the boy should reside under his entire control in his cottage for a certain number of days, and that he should promise silence as to the mode of treatment pursued. These conditions were acted on, and the lad suffered no ill effects from the bite, and is now a member of the medical profession himself.

Saliva was regarded as efficacious against hostile spells and the diseases occasioned by them, and until recently few Irish peasants would conclude a bargain without first spitting on their hand to ensure good luck. In Piers' "Account of Westmeath" we read that the power of curing burns was supposed to exist in the saliva of certain persons, who acquired the

<sup>a</sup> Pennant's *Tour in Scotland*. P. 298. London, 1772.

<sup>b</sup> Dalzell's *Darker Superstitions of Scotland*. P. 131. Glasgow, 1835.

<sup>c</sup> Vallancy's *Collectanea de Rebus Hibernicis*. Vol. III. P. 646.

<sup>d</sup> Windell's *Transactions of Kilkenny Archæological Association*. April, 1865.

virtue by drawing a lizard found in Westmeath across their tongue in a direction contrary to the scales of the reptile.<sup>a</sup> The reputation of saliva as a remedial agent is very ancient and widespread. Pliny devotes a considerable space to its supposed properties as a preservative from contagion and an antidote for poison.<sup>b</sup>

The ancient Irish medical manuscript, some extracts from which I shall now refer to, occurs in the Betham collection, and is numbered 409. Its antiquity may be inferred from the fact of its being spoken of in another treatise to which the late Mr. O'Curry assigned the date of 1350. The following extracts are taken from Mr. Long's manuscript translation of the Irish work, a copy of which exists in the library of the Academy. I need hardly observe that Mr. Long was well known as a most competent Celtic scholar, and I have not attempted to alter his rendering of the Irish text. This translation contains two distinct treatises. The first is entitled "The Materia Medica." The other is entitled "The Second Book, an Appendix to the Materia Medica." The character of these works is essentially different. "The Materia Medica" consists in an alphabetically arranged treatise on the various articles of the materia medica, and contains evidence of some acquaintance with the works of the principal classic writers on the subject.

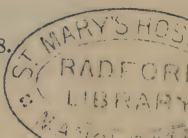
I now subjoin one example of each of the alphabetical division of the Irish Materia Medica, selecting the first example of each heading, or where that was too long, then the shortest. These may be taken as fair specimens of this work, the translation of which by Mr. Long forms a closely-written manuscript of 125 folio pages. I have also appended a few commentaries which appeared necessary to illustrate the text.

On some future occasion I may call attention to "The Second Book," of which I have transcribed the first part, together with some quotations taken at random, as examples of the popular medical superstitions that have prevailed more or less in Ireland from the extirpation of Celtic learning down to a recent period.

*"Materia Medica.*—Albedarig, Columbina, Basilicon—three names of the Columbine. It is hot and dry in the third degree, and one that has it about him or is rubbed with it will not be injured by venomous serpents or mad dogs. This herb boiled and applied to boils will break them. The juice of this herb or the herb itself broken small and put on a sore affected with cancer heals it; and it is good against darkness or obscuration of the sight. The juice of the roots of this herb and the blossom of the same herb boiled on wine excites the blood of the matrix. Boiled on butter, like oil, it relieves cough and spitting of blood. *Item.*—It is good for cleansing sores when combined with powdered alum and made into a salve."

<sup>a</sup> Vallancy's *Collectanea de Rebus Hibernicis*. Vol. I. P. 58.

<sup>b</sup> Pliny. *Hist. Nat.* Lib. VII., c. 2. Lib. XXVIII., c. 1.





“*Acorns*.—Make a powder of them, and put it into sores and it dries them; and the fresh leaves of the same tree boiled prevents the falling sickness. And it is said that it has the property of provoking the urine.”

“*The Cucumber*.—The roots made into an ointment ripens hard boils. The powdered roots dried in the sun and applied to sores cleanses them from excrescent flesh. The best time for collecting it is on the eighteenth day of August, and its virtue remains for one year.”

*Commentary*.—The Irish writer evidently means to describe the therapeutic properties of the “*cucumis sativus*,” or *εικνος*, of which Paulus Ægineta says:—“The seed is detergent and incisive. . . . The root is detergent, discutient, and emollient, but the juice is desiccative” (Paulus Ægineta’s Works, Book 7th, sect. 3rd, p. 385). Dioscorides also mentions that the leaves of the *cucumis sativus* were made into a cataplasm and applied to the bites of dogs.

“*Dens Leonis*, i.e., *Fearuhan Mor*, or Crowfoot.—It is very beneficial in *Leannta ruadh* (i.e., Red Humours). The roots of this herb and *Liathlus beag* (Mugwort), and *Gorman* (Pansies), the roots of *Lus-na-frange* (Common Tansey), and a small quantity of Fumitory, broken, put in strong ale along with honey, purifies the blood and expells *Leannta-dubha* (Black Humours). *Item*.—The same herb, and the yolk of an egg, and the juice of ribwort, and barley meal, cures an anthrax. The same herb, and the stems of Dock, boiled in a lye of Ash, and rubbed to the *Saillechnis* (or Filthy Skin), cures it.”

*Commentary*.—Neither the *Ranunculus Acris* or *Ranunculus Flammula* are now employed in medicine. Like all the *Ranunculaceæ*, the Crowfoot is a very acrid and poisonous plant, possessing powerful rubeficient and even vesicant properties, and perhaps on these depended the virtues ascribed to its external use in cutaneous diseases, as described above. In the “*Saxon Leechdoms*” (Vol. I., p. 101), we find that the *Ranunculus Scleratus*, was employed to eat away and destroy warts.

“*Fugo Demonium*, i.e., the *Bithnuadh*.—If boiled in wine or in water it purifies the blood, and opens obstructions of the liver and lungs. The powder of this herb put into bloody wounds dries them quickly. The reason this herb is called ‘*Fugo Demonium*’ is because it puts to flight the demons from the person who has it about him, and the person who has it in his hand will have the gift of eloquence.”

“*Galbanum*, i.e., the gum of a tree.—Three drachms given in a soft egg, or in a tisan of barley, relieves asthma. Put the same gum on red hot embers, and let its smoke into the nostrils and it cures lethargy; and to let its smoke into the mouth and it relieves suffocation.”

*Commentary*.—This account of *Galbanum* is taken from Dioscorides, who also speaks of its internal administration in cases of asthma, chronic coughs, &c.; and mentions its employment by way of fumigation in cases of epilepsy, hysteria, and amenorrhœa. (Lib. III., cap. 87.)

“*Hæderulæ Major*, i. e., the *Fliugh*, or Chickweed, and there is a softening, opening quality in it, and it prevents the pain of swelling.—Take this herb, boiled in water, and let it be put on the part where the pain is, and it cures it. . . . Dry this herb very well, and let ashes be made of it, and let a lye be made of these, and it prevents greyness.”

“*Lapis Magnetis*, i. e., the Loadstone.—It is the property of this stone to stop every issue of blood, and the power of attracting all iron is in it. According to Alexander, it is found on the shore of Thracian Sea, and every ship that sails through this sea that stone draws to itself, so that all who are therein are drowned. The powder of this stone, along with the juice of juniper, cures dropsy.”

*Commentary.*—The diuretic power here ascribed to the magnetic oxide of iron is mentioned by Galen, who also recommends it in cases of dropsy. The magnetic oxide of iron entered into the composition of several of the fanciful nostrums prescribed by Paracelsus to draw foreign bodies, beyond the reach of surgical treatment, from the internal parts of the body.

“*Mandragora*, i. e., the root of an herb, and its degree is not given by the authors.—There are two species of it—a male kind and a female kind; and it is said that it is under the gallows it is found, and that from the drops that fall down from them on the earth are created a human form; and it is the root that resembles man. Its rind retains its virtues one year. To put it under the head of the patient and it excites sleep. To give the roots of this herb in wine to drink, and it reduces inflammation. And this herb has many other virtues.”

“*Os de Cor Cervi*? i. e., the bone which is found in the heart of the deer; and of the blood of the heart it originates.—A similar bone is found in the heart of the goat, and it is sold as this bone; but the bone of the deer’s heart is reddish, and the bone of the goat’s heart soft and white. It retains its virtue thirty years. To dry it first in the sun and the power of relieving the heart is in it, and it cleanses the blood. To boil a chip of this bone and it relieves syncope. To drink the powder of this bone on wine and it cures a flux of blood. And Aurelius says that there are many other virtues in this bone.”

*Commentary.*—“The bone of a hart’s heart” is spoken of in the “*Medicina de Quadrupedis* of Sextus Placitus,” translated in the first volume of “*Saxon Leechdoms*:”—“17. For a woman’s conception a bone is found in a hart’s heart, sometimes in its belly; if thou hangest that bone on a woman’s arm, and tiest it sharply, rathely she conceiveth” (p. 339).

“*Plumbum*, i. e., Lead.—There is a reducing power in it. A thin plate of lead put on the inflamed members relieves them. It lessens the purulent matter of sores. To stop the pain of a burn of fire or water put a leaden plate outside on it and it relieves it.”

"*Quercus*, i.e., the Oak, and there is a drying checking quality in its bark, leaves, and acorns.—Break the leaves of this tree small and put them in wounds, it stops the flux of blood and heals them. Boil its bark in water and drink the water, and let the patient sit on the bark, and it stops flux from the bowels and of the uterus. There is in the acorns of the oak the quality of exciting the urine and curing every flux; and there is greater virtue in its shells than in its leaves or fruit, and in the cups of the acorn than in the shells."

"*Rosmarinus*, Rosemary, and its degree has not been got from the authors. Its blossom and leaves are good for the cure. Boil the blossom in wine and it cures the chin-cough and cardialia. Boil the same blossom in wine, and let its smell and vapour rise under the nose, and it relieves headache greatly. A plaster of the same herb put on the navel relieves strangury and dysentery. Boiled in rape water and it is proper for paralytic persons."

*Commentary.*—Dioscorides describes three species of rosemary to which he attributes diuretic and emmenagogue properties (Dioscorides, Lib. III., cap. 89). Paulus Ægineta also describes three species of *Λιβανωτός* or rosemary. The diseases in which he recommends it differ from those in which the Irish physician prescribed it, being jaundice and dimness of sight (Lib. VII., sec. 3). Pliny, too, speaks of rosemary (Hist. Nat., Lib. XIX., cap. 62).

"*Saffron*, i.e., the *Tulchan* (*Crocus Sativus*), and it is the roots of this herb that are fit for the cure. *Item.*—To boil its roots in vinegar and honey and it relieves *galar-na-nalt*, the gout."

"*Somnus*, Sleep, and these are the things that excite it—viz., red poppy, and opium, henbane, mandragora, and *ros lachán* (lesser duck meat), and cold water."

"*Turbid.*—It is hot and dry in the third degree; and it is the root of a tree, and it sharpens every cure; and it discharges white humours."

"*Vernix*, i.e., the Gum of a Tree; it is cold and dry in the second degree. There are three sorts of it—yellow, and white, and red—and the white is the best. Put vernix, and frankincence, and the white of eggs on the mouth of the stomach, and it stops all vomiting. And it retains its virtue one hundred years."

*Commentary.*—The last article of the Irish *Materia Medica* is the Juniper Resin, or Sandaracha, which is no longer employed in medicine. Serapion describes it as "a gum of a yellow colour," and Avicenna speaks of sandaracha under the name of "vernix" as being "hot and dry in the second degree." This gum was employed by the ancients as an astringent in cases of hæmoptysis and other hæmorrhages.

# SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

## VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday,  
March 26, 1881.*

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin, -	333,401	808	863	2	2	13	3	12	34	8	33·7
Belfast, -	174,412	503	398	—	1	—	4	14	10	12	29·7
Cork, -	78,642	162	208	—	2	2	1	7	1	6	34·4
Limerick, -	39,353	75	108	—	1	5	—	3	2	5	35·7
Derry, -	25,242	81	61	—	—	—	—	3	—	1	31·4
Waterford, -	23,349	51	64	—	—	1	—	—	—	3	35·7
Galway, -	15,597	28	37	—	—	—	—	—	4	2	30·8
Sligo, -	10,670	14	15	—	—	1	—	—	—	1	18·3

### Remarks.

A very high death-rate prevailed in all the towns except Sligo. In twenty large English towns the mortality was at the rate of 22·1 per 1,000 of the population annually; in the sixteen principal town districts of Ireland it was as usual much higher—namely, 31·4 per 1,000. The death-rate was 21·8 per 1,000 annually in London, 24·1 in Glasgow, 21·6 in Edinburgh, 33·0 within the registration district of Dublin, when the deaths of persons admitted into public institutions from localities outside the district are omitted, and 34·6 within the municipal boundary of Dublin, when a similar correction is made. The high mortality in Dublin was not caused by zymotic diseases, to which class only 98 deaths were attributed, compared with an average of 147·2 deaths in the corresponding four weeks of the previous ten years. The zymotic death-rate was only 11·4 per cent. of the mortality from all causes. Fever, scarlatina, and whooping-cough were fatal in Dublin. Of the last two diseases fatal cases were also reported from several of the Irish towns. In Dublin diseases of the respiratory organs continued prevalent and destructive to life. The deaths were 211, compared with an average of 206·2, and they included 169 from bronchitis (average = 158·8) and 28



from pneumonia (average = 28·9). To pulmonary consumption 100 deaths were attributed, against 121 in the preceding four weeks. At the close of the period the number of cases of epidemic diseases under treatment in the principal Dublin hospitals were as follow—smallpox 2, measles 8, scarlatina 31, typhus 100, typhoid fever 8, and pneumonia 10. Smallpox caused 202 deaths in London, compared with 205 in the four weeks ending February 26.

#### METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of March, 1881.*

Mean Height of Barometer,	-	-	-	29·858 inches.
Maximal Height of Barometer (on 17th at 9 p.m.),	-	-	-	30·515 „
Minimal Height of Barometer (on 5th at 9 p.m.),	-	-	-	29·060 „
Mean Dry-bulb Temperature,	-	-	-	42·8°.
Mean Wet-bulb Temperature,	-	-	-	40·5°.
Mean Dew-point Temperature,	-	-	-	37·4°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·232 inch.
Mean Humidity,	-	-	-	81·6 per cent.
Highest Temperature in Shade (on 10th),	-	-	-	56·7°.
Lowest Temperature in Shade (on 1st),	-	-	-	27·1°.
Lowest Temperature on Grass (Radiation) (on 1st),	-	-	-	22·9°.
Mean Amount of Cloud,	-	-	-	60·3 per cent.
Rainfall (on 17 days),	-	-	-	1·885 inches.
General Directions of Wind,	-	-	-	W. by N.; E.S.E.

#### *Remarks.*

The earlier part of this month was unsettled, with frequent rains and high winds. On the 15th the weather became very fine and mild, continuing so until the 20th, when a cold, dry period commenced, which lasted to the close of the month. On the 2nd a deep depression approached Ireland from the Atlantic, causing a strong, cold S.E. gale, and ultimately bringing very rough weather with heavy falls of sleet or snow to all the British coasts. In Scotland, where severe frost had been experienced on the morning of the 2nd, violent S.E. gales raged for several days, and immense quantities of sleet and snow fell daily. In Ireland, on the contrary, the weather became mild on the 5th, and remained so for some time, although the air was damp and the wind was blustering. In Dublin the mean temperature of the week ending Saturday, March 12, was 48·4°, or about 11° above that of the preceding week and 5° above the average for the time of year. On the 14th a considerable change in the distribution of pressure over Western Europe took place, ushering in a period of mild, fine weather, with drying winds. On the 15th bright, beautiful weather held all day, and an unclouded

sunshine from morning till evening presaged the coming spring. On Sunday, the 20th, a sudden change to winterly weather spread quickly southwards over the United Kingdom. On the 21st showers of hail, snow, or sleet were everywhere prevalent, and next morning two or three inches of snow covered the ground in the north-east of Ireland as far south as Dundalk. After the 25th no rainfall occurred in Dublin, but the weather was cold, with searching easterly winds. Frosts were frequent at night, and there was much sunshine by day. Snow or sleet fell on the 1st, 3rd, 21st, 22nd, and 25th; hail fell on the 3rd, 21st, 24th, and 25th. A solar halo was seen on the afternoon of the 8th. The atmosphere was more or less foggy on the 4th, 5th, 7th, and 28th. The planet Venus shone as an evening star with extraordinary brilliancy throughout the month.

## PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

### A NEW METHOD OF PRODUCING ANÆSTHESIA.

M. BROWN-SEQUARD (*Société de Biologie*) has found that by forcibly depressing the head of an animal, so as to cause marked irritation of the bulb and cervical spinal marrow, an anæsthesia is produced, which is often so pronounced that, without causing notable pain, an operation may be performed, which is ordinarily very painful—such, for example, as laying bare the spinal marrow, and dividing the posterior column or the lateral half of this nervous centre. The experiment generally succeeds better in small than in large animals; but, even in dogs, it often produces its anæsthetic effect in a very marked degree. The author recalls the fact, that he discovered some time since, that in this experiment there is diminution and sometimes arrest of respiration and circulation, lowering of the temperature, and change in the colour of the venous blood, which from being black becomes reddish.—*Gaz. Med. de Paris*, 12 Feb., 1881.

### THE SIGNIFICANCE OF FACIAL HAIRY GROWTHS AMONG INSANE WOMEN.

In a paper with the above title by Dr. Allan McLane Hamilton, in the *N. Y. Med. Record*, March 12, 1881, the author gives the history of several cases of insane women presenting abnormal hairy growths on their faces. A consideration of these cases, he thinks, shows that—

1. Abnormal growth of hair, especially upon the face, is frequently closely connected with disturbed function of the pelvic organs of women.
2. That in the insanity of women, especially when it lapses into dementia,

and cutaneous nutritive changes exist, such growths of hair are by no means of uncommon appearance. 3. That their unilateral character, so far as preponderance in growth is concerned, and their association with unilateral cutaneous lesions, such as bronzing and nail-changes, indicate their nervous origin. 4. Their appearance chiefly upon the face in insane patients, and relation to trophic disorders incident to facial neuralgia, point to the fifth nerve as that concerned in the pathological process. 5. The development of hair, with the deposit of pigment and skin lesions, and occasional goitrous swellings, suggest the inference that the neuro-pathological process which leads to the growth of hair in the chronic insane is akin to that which gives rise to Addison's disease.

#### INHALATIONS IN DYSPNŒA.

M. BERT's mixture of oxygen and protoxide of nitrogen has been employed with success in attacks of angina pectoris, in asthma, and in paroxysmal cough from aortic aneurism by Dr. Klikokowitsch, of St. Petersburg. After a few inhalations during the attacks marked relief was obtained, and the patients fell asleep. He used a mixture of two parts of  $N_2O$  and one part of O. This mixture was proved to be preferable to the inhalations of pure O.

KARL KAUFMANN, M.D., Frankfurt am Main.

#### NON-POISONOUS PRESERVATIVE FLUID.

THE *Ohio Med. Record* states that Wickerscheimer's fluid (*vide* *Dubl. Med. Journal*, Feb., 1880, p. 173) has proved an utter failure in preserving subjects, and quotes Heger's formula for an effective preservative and antiseptic, as follows:—Take salicylic acid, 20 parts; boracic acid, 25 parts; potassium carbonate, 5 parts; dissolve in hot water, 500 parts; then add oil of cinnamon, oil of cloves, of each 15 parts; dissolve in alcohol, 500 parts. It is an exterminator of moths and vermin, and has a pleasant odour.—*Lond. Med. Rec.*, March 15.

#### EYE LESIONS IN LOCOMOTOR ATAXIA.

CLOZIER (*Recueil d'Ophtal.*, Sept., 1880) reports two cases of this disease with interesting eye lesions. In both there was entire absence of syphilitic symptoms, the motor incoördination was almost completely wanting, and the ataxy first betrayed itself by the ocular symptoms. These were accompanied by very violent pains in the region supplied by the ganglionic branch of the fifth pair. In the first case the pains seemed to follow the course of the anatomical lesion, becoming less as the latter was arrested, and more severe as it again became progressive. In the second case the neuralgic pains in the occipital and left parietal regions and left side of the face were followed by an incomplete but very distinct anæsthesia of the same regions.—*N. Y. Med. Jour.*, Jan., 1881.

# THE DUBLIN JOURNAL

OF

## MEDICAL SCIENCE.

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JUNE 1, 1881.

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### PART I.

### ORIGINAL COMMUNICATIONS.

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ART. XVII.—*A Case of Abscess of the Liver; Aspiration; Recovery.*<sup>a</sup> By GEORGE F. DUFFEY, M.D., Dubl.; Fellow and Examiner, King and Queen's College of Physicians; Physician to Mercer's Hospital; Examiner in the Institutes of Medicine and Pathology in the University of Dublin, &c.

CASES of abscess of the liver are of such comparative infrequency in Ireland, and indeed in European countries generally, that the report of even a single instance of the disease may be of interest. During a period of five years hepatic abscess was met with in the Berlin Pathological Institute in only 36 out of 2,463 autopsies<sup>b</sup>—that is, in 1·5 per cent. And Barensprung,<sup>c</sup> out of 7,326 autopsies recorded during the years 1859-73 in the same Institute, found hepatic abscess in almost exactly the same percentage of cases—viz., 1·48 per cent. M. N. Gueneau de Mussy,<sup>d</sup> Hammond,<sup>e</sup> and Janeway,<sup>f</sup> however, consider the disease to be more common in France and in the United States than is generally believed.

CASE.—Thomas T., aged thirty-nine, was admitted to Mercer's Hospital on July 10, 1880. He was invalided from the Royal Artillery in 1878 for deafness, after nineteen and a half years' service, fourteen of

<sup>a</sup> Read before the Medical Society of the King and Queen's College of Physicians in Ireland, Wednesday, May 4, 1881. [For the discussion on this paper see p. 548.]

<sup>b</sup> Ziemssen's Cyclop. Vol. IX., p. 90.

<sup>c</sup> Loc. cit. P. 106.

<sup>d</sup> Rev. des Sci. Méd. T. VIII., p. 180.

<sup>e</sup> Vide postea.

<sup>f</sup> New York Med. Jour. Sept., 1879. P. 320.



which were passed in India. When in India he drank freely, chiefly rum. During the first six months of his sojourn in that country he suffered from "fever and ague," and was subject to the same complaint every subsequent hot season for some years. While in India, he states, he had dysentery off and on, but never sought medical treatment for it. The last five years he was there he was very well. When at Meerut, in 1865, he was in hospital for about a month with some cardiac affection, from which he quite recovered. He returned to England from India in December, 1873, and for the following year drank very hard. In 1875, when stationed at Stoke, he was for about one month in his regimental hospital with symptoms of hepatitis. He never had felt any pain in the region of the liver until then. Since his discharge from the army he has been employed in a cutler's establishment making wooden handles for "slash hooks." His health has been good, and his habits, he states, moderately temperate. He denies ever having had syphilis.

On admission the patient, like most men who have been many years in India, presented the characteristic appearance of malarial cachexia. He complained of severe pain about the epigastric region, which commenced suddenly, and without any apparent cause, as far as he knew, seven days prior to admission. The day following this sudden access of pain he noticed that there was a slight swelling where the pain was situated. On examination the right hypochondriac region was seen to be evidently enlarged, and a small and well-defined prominent tumour, about the size of a pigeon's egg, was observed in the epigastric region, one inch to the right of the mesial line. Pressure on this tumour, or the act of coughing, aggravated the pain. The edge of the liver—which organ extended three inches in the right mammary line below the ribs, and was extremely sensitive to the touch—could just be felt below the tumour. The latter moved with the liver on inspiration and expiration, and had a slight visible pulsation communicated apparently to it. He was kept awake at night by the pain of the tumour, and was thirsty. He complained of a feeling of weight and heaviness in the right hypochondrium, and was unable to lie on his left side; no pain in right shoulder-tip. The apex-beat of the heart was in the fifth intercostal space, and almost in the nipple line, the area of cardiac dulness extending outwards to a corresponding situation. No cardiac murmur detected; pulse normal; temperature 99°; urine acid, loaded with urates, sp. gr. 1025, no albumen; tongue coated; appetite poor; bowels confined; no rigors, vomiting, or jaundice; no splenic enlargement; no fluctuation was detected in the tumour—the skin over it was not discoloured or cedematous, and there was but slight tension of the rectus muscle.

Poultices were constantly applied, and some relief to the pain obtained by the hypodermic injection of morphia, and the application of two leeches to the tumour. After six days in hospital—the pulse remaining

normal, and the temperature not rising over  $99^{\circ}$  all the time—it was manifest that the tumour had increased in size, and that he was becoming weak. The bowels were persistently confined, requiring purgatives, and the pain and tenderness on palpation of the tumour as well as of the enlarged liver had increased. Obscure fluctuation was now detected in the tumour, and on the 20th—that is, ten days after his admission—an exploratory puncture was made with the needle of a hypodermic syringe into the most prominent portion of the swelling, the integument being first drawn downwards, and a small quantity of yellowish “laudable” pus withdrawn. He slept well that night, and on the following day half an ounce of similar pus was withdrawn by means of an aspirator. A very small cannula was used, and its becoming clogged prevented a larger quantity of pus being removed. Nevertheless, the patient felt much relieved; he passed a good night without either chloral or morphia, which he previously was obliged to take to procure sleep. There was no rise of temperature after either paracentesis. The puncture in both cases was simply dressed by applying over it a piece of lint dipped in carbolic oil, underneath a pad and bandage. Three days after the second puncture an ounce of pus was removed by aspiration. From this time he improved rapidly. No pain was felt except when he coughed. The tumour subsided, and the liver returned to its normal position. He regained health and strength in a most satisfactory manner, and was discharged from hospital on the 7th August, after being under treatment one month.

On the 19th January, 1881, he was readmitted with bronchial catarrh and some congestion of the base of the right lung, for which he was a fortnight in hospital. No enlargement of the liver could be detected. He had some pain in the right shoulder, but none in the right hypochondrium, and he assured me he had had no pain or uneasiness in that situation since last discharged from hospital, five and a half months previously.

He was again admitted to hospital on the 23rd of February last, when he stated he was suffering from “fever and ague,” similar to what he used to have in India. He complained also of “crampy” pain in the abdomen, chiefly in the hypogastric and lumbar regions. His liver was again considerably enlarged and tender on pressure, but there was no acute pain in it. He had great frequency of micturition, having on some nights previous to admission to get out of bed as often as twelve times to pass water. The urine contained a large amount of blood, and he stated it had been of a similar sanguineous character for a fortnight previously. It was abundant in quantity, and of a low specific gravity, 1008. Epithelial cells and some small granular tube-casts, in addition to numerous blood-corpuscles, were found in it. His bowels were constipated; tongue coated; appetite bad. He denied having been drinking. He had a

severe and prolonged rigor, followed by a well-marked sweating stage, on each of the two days following his admission. These paroxysms, however, yielded to large doses of quinine. The spleen was not enlarged. He was finally discharged, convalescent, on April 2nd.

I shall restrict any remarks I make at present on this case to its diagnosis, ætiology, and treatment.

In the first place, then, the close simulation which a localised abscess in the abdominal parietes over the liver often bears to hepatic abscess was not forgotten. Dr. Stokes speaks of such circumscribed inflammation as "a form of disease which is very liable to be confounded with hepatic abscess, as it has many symptoms in common with this affection."<sup>a</sup> Usually matter, he says, forms speedily under the integuments, and, on this being evacuated, the patient rapidly recovers. But he has witnessed and describes at length a case of this disease which proved fatal in a woman, aged twenty-three. The suddenness with which the pain set in was somewhat, therefore, in favour of the diagnosis of inflammation of the sheath of the rectus muscle; and in a case reported by the late Dr. Neligan at a meeting of the Medical Society of the College of Physicians on Nov. 3rd, 1853, subsequent to a description by Dr. Lees of a case of "epigastric neuralgia,"<sup>b</sup> this circumstance, along with the very slight disturbance of general health which existed, was relied upon in distinguishing such local inflammation, with a tendency to the formation of matter behind the muscle, from disease of some of the abdominal viscera. But, on the other hand, the sudden setting in of a sharp pain, aggravated by pressure on movement, with a dry cough, will, Maclean says, at once raise the suspicion of abscess on the convex portion of the right lobe "pointing" towards the chest.<sup>c</sup> Although the constitutional symptoms were so slight in my case, the fact of the edge of the enlarged and tender liver extending below the lower margin of the swelling, which latter also ascended and descended with respiration, enabled a clear diagnosis to be made.

According to the observations of hepatic abscess collected by Rouis (quoted by Frerichs<sup>d</sup>), an increase in the volume of the inflamed liver was observed in 73 out of 122 patients, or in 60 per cent. In most cases the increased volume was first observed at

<sup>a</sup> *Cyclopædia of Pract. Med.* Vol. III., p. 47.

<sup>b</sup> *Trans.* Session 53-54. P. 33.

<sup>c</sup> *Reynolds' System of Med.* Vol. III., p. 333.

<sup>d</sup> *Dis. of Liver.* Vol. II., p. 125.

the commencement of the suppuration. The patient under my observation was positive that he had no enlargement of the liver prior to the pain setting in.

A microscopic examination of the pus removed by the exploratory puncture with the hypodermic syringe corroborated the original diagnosis. In addition to numerous pus corpuscles and oil globules, several easily recognised hepatic cells, more or less broken down, were observed, as well as some large, flat, crystalline plates. Dr. Harvey, who also kindly examined the pus microscopically, confirmed the presence of liver cells and of the above-mentioned plates in it. A specimen which was reserved for further examination, with a view especially of further examining these plates, was, unfortunately, mislaid. The detection of particles of hepatic tissue in the pus of a hepatic abscess, as a means of diagnosis in doubtful cases of that affection, was the subject of a lecture by Dr. Fenwick in *The Lancet* of Nov. 17, 1877. And Prof. Maclean<sup>a</sup> and others<sup>b</sup> refer to the information furnished by a microscopical examination of such pus. But the only reference, as far as I know, to the presence in it of a similar substance to that noticed by Dr. Harvey and myself as of additional diagnostic importance, is made by Dr. Ford,<sup>c</sup> who, speaking at a meeting of the St. Louis Medical Society in 1878, on the diagnosis of hepatic abscess, says that there is a point in their diagnosis which has not, to his knowledge, been noted—that is, that in the pus from them *cystine* is sometimes found. He states that this substance is doubtless formed from the taurine of the tauro-cholic acid of the bile, and that, when found, we may be sure the pus has an hepatic origin. It is to be regretted that a more perfect and satisfactory examination of the plates or crystals I observed was not made. To me they certainly appeared, microscopically, to resemble cystine, as figured by Beale,<sup>d</sup> and thus to be corroborative of Dr. Ford's observation.

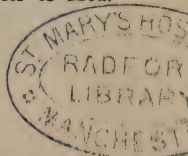
The absence of any elevation of temperature in the case I have brought forward might be considered conclusive evidence against its being one of hepatic abscess. Murchison, however, quotes two cases at length in which there was no pyrexia. Although an exceptional occurrence, and one difficult to account for while suppuration is going on, absence of fever in these cases is, he thinks,

<sup>a</sup> Reynolds' System of Med. Vol. II., p. 327.

<sup>b</sup> Rev. des Sci. Méd. T. IX., p. 644. Whittaker. St. Louis Courier of Med. Aug., 1880. P. 155.

<sup>c</sup> St. Louis Med. and Surg. Jour. May, 1878. P. 384.

<sup>d</sup> The Microscope in Medicine. Fourth Edition. Pl. LV. P. 363.





far from being unique.<sup>a</sup> Bristowe<sup>b</sup> also states that fever is sometimes wholly absent, and may indeed be absent during the entire progress of cases attended with extensive suppuration. In a case reported by Prof. Maclean,<sup>c</sup> in which *post mortem* examination proved the presence of large abscess in the liver, there were no rigors or night sweats. There was absence of any febrile symptoms at any part of the day—the man's temperature, while under observation, being more frequently below than above the normal standard. Dr. Davis, who has contributed an important paper on "Hepatic Abscess" to the *New York Medical Journal* (June, 1878), based on thirty-six cases of the disease occurring in his practice at Zacatecas, a mining city situated on the great plateau or tableland of Mexico—a situation where suppurative hepatitis is frequent, although rare on its western coasts—states that hectic or suppurative fever is by no means present in every case. The striking rapidity with which the constitutional symptoms subsided after the operation in my case has been remarked also by Maclean<sup>d</sup> and other observers.<sup>e</sup>

Granted the case to have been one of hepatic abscess, the ætiology and proximate cause of the latter is somewhat obscure. That the disease may exist without apparent assignable cause, is borne out by the reports of other cases.<sup>f</sup> In the present instance all pyæmic or metastatic causes may be dismissed. Excepting his former attacks of dysentery, there was no history or symptom of any ulcerative or other disease in any of the organs from which the portal vein arises; no head injury or suppuration of bone, no entozoa, no inflammation of hydatid cysts, hæmorrhagic infarction, phlebitis, or history of biliary calculi. According to Frerichs, Bamberger, and others, cases of suppurative hepatitis occur in temperate climates, in which, notwithstanding the most careful investigation and review of the conditions observed during sickness and after death, it is impossible to determine with certainty the existence of any of the ætiological factors above alluded to.<sup>g</sup> In a case under the care of Dr. William Roberts and Mr. Heath in the Manchester Royal Infirmary, reported quite recently in *The Lancet*

<sup>a</sup> Diseases of the Liver. Second Edition. P. 204.

<sup>b</sup> Practice of Med. P. 765.

<sup>c</sup> Army Med. Dep. Reports. 1871. P. 310.

<sup>d</sup> Ibid. 1867. P. 305.

<sup>e</sup> Cf. Sanders. Indian Med. Gaz. June 1, 1878.

<sup>f</sup> Janeway. New York Med. Jour. Sept., 1879. P. 316.

<sup>g</sup> Thierfelder. Ziemssen's Cyclopædia. Vol. IX., p. 105.

(March 5, 1881), there is no evidence given of the existence of any of the ordinary circumstances under which hepatic abscess usually occurs. There was no history of dysentery or of syphilis. The patient had, however, for several years been in the habit of drinking large quantities of whisky, and seven years prior to admission to hospital had been in America, where he was much exposed to cold, and suffered from diarrhœa.

The fact that the patient suffered from dysentery when in India may suggest to some a connexion between these attacks and the hepatic abscess. But apart from the length of time—about twelve years—which intervened between the two diseases, the circumstance that the history of the case before us points to the abscess being a single one, is one of the best arguments against its being of dysenteric origin. Besides, in the consideration of this subject, it may be remarked that, although hepatic abscess and dysentery are often present in the same individual, “liver-abscess must be regarded generally rather as an expression of the general disease than as consecutive to the dysenteric ulceration of the large intestine.”<sup>a</sup>

Moreover, Budd's theory is considered untenable by Frerichs and several other authorities. Cheyne<sup>b</sup> has published two cases of dysentery accompanied with hepatic abscess occurring in this country; but, as a general rule, suppurative hepatitis may be said never to supervene in the epidemic dysentery of temperate climates, although this differs in no essential particular from tropical dysentery. Again, hepatitis is often met with in the tropics unattended by dysentery; and then, too, it not unfrequently happens that the dysentery makes its appearance only after the hepatitis has been fully established. And, as Thierfelder<sup>c</sup> further remarks, Budd's theory lacks, moreover, sufficient support from pathological anatomy, as scarcely any observations are recorded of the existence of coagula in the veins proceeding from those parts of the bowels which are affected by dysentery. Sachs<sup>d</sup> from his experience at Cairo (36 cases) completely rejects any relation as to cause and effect between the two diseases. At the Seamen's (Dreadnought) Hospital, according to Dr. Ward,<sup>e</sup> hepatic abscess

<sup>a</sup> Fayrer. Lettsomian Lectures on Tropical Dysentery. Med. Times and Gaz. Jan. 27, 1881. P. 91.

<sup>b</sup> *Dubl. Hosp. Rep.* Vol. III., p. 36.

<sup>c</sup> Ziemssen's *Cyclop.* Loc. cit. P. 110.

<sup>d</sup> *Arch. f. klin. Chir.* T. XIX., 2<sup>e</sup> fasc. 1876. P. 235. From *Rev. des Sci. Méd.* T. VIII., p. 180. 1876.

<sup>e</sup> On Some Affections of the Liver, &c. London. 1872. P. 18.

has not occurred in five per cent. of the cases of well-marked and severe dysentery. Indeed many writers, especially those having experience in warm climates, regard suppurative hepatitis as an idiopathic affection—malarial and dysenteric poisons being the predisposing, and sudden chills and the abuse of alcohol the exciting causes of the disease.

Murchison<sup>a</sup> points out that a tropical abscess—meaning by the term tropical the single large abscess so common in warm climates, or in persons who have at one time resided in the tropics, or sustained some local injury of the liver—may be so latent as to reveal itself by neither local signs nor constitutional symptoms. And he further states that “cases are not uncommon where a small tropical abscess with thick organised walls has existed for months, or even years, in a quiescent form, and has then undergone enlargement and burst. Some of the cases met with in this country, where a large abscess forms in the livers of persons years after their return from India, admit of this explanation; while others are, perhaps, what Sir James Paget<sup>b</sup> would call ‘residual abscess,’ or abscess formed in or about the residues of former inflammation.” In about three-fourths of all cases of the tropical varieties of hepatic inflammation the abscess is single and limited to the right lobe,<sup>c</sup> as I believe it to have been in the present instance.

In the case of a small abscess the formation of pus is sometimes arrested. The pus may then become thickened by a resorption of its fluid constituents. Sachs<sup>d</sup> cites a case in which he observed this rare mode of termination. In other cases connective tissue is developed, and forms a capsule round the abscess, which may thus continue in an encapsulated condition for a long period, the principal mass of the contents being still composed of liquid pus.<sup>e</sup> In like manner Maclean states that “where hepatic abscesses are stoutly encysted they may remain for months, perhaps for years, latent, producing little or no constitutional disturbance.” He illustrates this statement by citing the cases of two men who for months, perhaps for years, were able to go about—one of them labouring on a sugar plantation, the other doing his military duty as a sergeant—yet both had abscesses in their livers. In both

<sup>a</sup> Loc. cit. Second Ed. P. 185.

<sup>b</sup> St. Barth. Hosp. Rep. 1869. Vol. LXXIII.

<sup>c</sup> Ziemssen. Loc. cit. P. 116.

<sup>d</sup> Loc. cit.

<sup>e</sup> Ziemssen. Loc. cit. Pp. 119, 150.

cases the abscess burst after some exertion into the pericardium.<sup>a</sup> In the majority of cases suppurative hepatitis assumes a chronic form. It often happens that the symptoms are temporarily modified or disappear altogether, to become aggravated again, or reappear anew, at the expiration of weeks or months. There may be also a period of complete latency interposed in the progress of them. Sir Joseph Fayrer<sup>b</sup> lays stress upon the fact that pus may become encysted, quiescent, and so localised as to have little or no apparent disturbing effect on the general health, and yet such a condition is fraught with danger from any accession of inflammation in the cavity or its vicinity, and the consequent increase of the primary abscess or the development of new ones.

Cicatrices, either alone or accompanied by purulent deposits, have been found in the liver after death by several observers on *post mortem* examination of individuals who had exhibited during life unequivocal signs of hepatitis.<sup>c</sup>

From the numerous cases that have been recorded we may therefore reasonably conclude that an abscess of the liver may remain latent for an undetermined period, and that symptoms may only occur when it approaches the surface, and gives rise to peritonitis.<sup>d</sup> In the autopsy of a syphilitic patient—who once had all the signs of hepatic abscess, but recovered—Dr. Dewees,<sup>e</sup> found a small cavity, with a mass, in the larger lobe of the liver, like half an ounce of concrete pus. It had slight induration around it, and a mark like that of a cicatrix. Dr. J. Hughes Bennett<sup>f</sup> also has shown that indurated masses—not necessarily of syphilitic origin—are seen occasionally in the liver, accompanied by puckerings and cicatrices of the surface. In some cases of hepatic abscess the wall of the abscess is indurated and thickened, showing that the disease was very chronic, and unaccompanied by any symptoms. Finally, in an admirable memoir by Dr. Davis,<sup>g</sup> entitled “Microscopical Studies on Abscess of the Liver” (to which I would refer all persons interested in the subject), that accurate observer states that abscess sometimes forms in the liver which is never made manifest by noticeable symptoms—the patient going on perhaps for years,

<sup>a</sup> Reynolds. Loc. cit. P. 334.

<sup>b</sup> Lancet. Vol. I., p. 675. 1880.

<sup>c</sup> Ziemssen. Loc. cit. Pp. 144, 150.

<sup>d</sup> Trans. New York Path. Soc. Vol. I., p. 235.

<sup>e</sup> Ibid. P. 241.

<sup>f</sup> Clin. Lect. on the Principles and Practice of Med. 4th Ed. 1865. P. 503.

Archives of Medicine. August, 1879. P. 41.



and finally dying from some other disease." In a case of formation of abscess of long standing the abscess becomes encysted. The changes leading to the formation of a sac around the abscess were studied by Dr. Davis in a specimen in which a liver abscess of the size of a man's fist was formed on the convex surface, close to the peritoneum, which was found transformed into a tough pseudo-membrane of at least 4 mm. in thickness, and closely adherent to the diaphragm.

There is a possibility of the abscess cavity, in the case I have related, having been inclosed by a cyst, as Aitken<sup>a</sup> says it sometimes is; and its *superficial* nature might be inferred from the fact of its tending to point or empty itself through the external integument—the direction taken in the minority of cases by hepatic abscesses, according to the same authority.

The absence of fever was also in favour of the view of the abscess being a *small* one. A patient with such an abscess may, as Niemeyer says, live for years in passable health.<sup>b</sup>

With reference to the character of the pus removed from hepatic abscesses, it has been observed to present "every variety of colour, consistence, and odour." According to Prof. Maclean's experience, as a rule, it is "laudable," as it was in my case. "Mr. Waring has noted it as 'thick,' 'creamy,' 'white,' 'greenish,' 'sero-purulent,' 'brownish, or 'reddish,' and so on."<sup>c</sup> In all of Dr. Davis's cases the pus was of a chocolate-colour, except in one instance, in which it was of a cream-colour.<sup>d</sup>

I have adduced these statements at length with the object of strengthening the theory I have formed as to the probable cause of this man's abscess. It is evident that he suffered from intermittent fever while in India. His cachectic appearance, and the occurrence prior to, and at the time of, his last admission of attacks like those of intermittent fever show that he is still suffering from malarial poison. Hepatitis, as a result of this, is, we know, very common; and there is a history of his having been treated for inflammation of the liver while in the army. His long residence in India, and his intemperate habits, may, therefore, have rendered his liver predisposed to inflammatory attacks. The probable exciting cause of these attacks I only recently obtained a clue to, on closely questioning the man. He informs me that at

<sup>a</sup> Science and Prac. of Med. 7th Ed. Vol. II., p. 906.

<sup>b</sup> Niemeyer. Text Book of Prac. Med. Vol. I., p. 641. 1871.

<sup>c</sup> Reynolds. Loc. cit. P. 326.

<sup>d</sup> N. Y. Med. Jour. Loc. cit. P. 579.

his present occupation of paring the handles for slash hooks, his right hand, holding the knife, often slips from the piece of wood which is held in his left hand, at some distance from the body, and strikes him forcibly in the hepatic region; and he states that he frequently has to "give in" from the pain thus caused by the violence of the accidental blow. Now, mechanical or local injury of the liver is a recognised cause of hepatic abscess. May not the oft-repeated contusions to which this man was subjected, co-operating with an unfavourable condition of the liver due to previous hepatitis and his intemperate habits, have disposed it to take on a circumscribed local inflammation, terminating in supuration?<sup>a</sup> Or, is it possible that, arising from the attack of hepatitis he had when in the army, a latent encapsulated, and comparatively superficial, abscess had formed, in the neighbourhood of which the irritation caused by these repeated blows had set up fresh inflammation? According to this view the abscess had been latent for an undetermined period, and symptoms only occurred when, in consequence of a fresh action being set up in it, it approached the surface and gave rise to peritonitis.<sup>b</sup> The fact that the patient is again suffering from enlargement of the liver is in favour of either of these views. If the abscess had not been superficial its existence would probably not have been suspected, the symptoms attending it—apart from the evidence afforded by the presence of a tumour—being so uncharacteristic.

As regards the treatment of hepatic abscess little need be said. There is nothing particularly novel in the removal of their contents by aspiration. Although, in any case, the opening of a liver abscess, according to Sir Joseph Fayrer,<sup>c</sup> is a critical proceeding, when its contents can be removed by an aspirator it would seem to be the safest way of procuring that object. This is especially the case if the abscess is small, single, and superficial. In every case it is desirable to anticipate spontaneous opening by any of the usual channels, for all are dangerous—that through the abdominal parietes the most so.<sup>d</sup> By whatever manner hepatic abscesses are opened the operation should be performed early; for, by so doing, the danger of death from exhaustion, hectic fever, and diarrhœa is avoided, or lessened. In this connexion I purposely

<sup>a</sup> Cf. Curschmann. Contribution to the study of Traumatic Abscess of the Liver. *Rev. des Sci. Méd.* Tome V., p. 564.

<sup>b</sup> Cf. *Trans. N. Y. Path. Soc.* Vol. II., p. 235.

<sup>c</sup> *Lancet.* Loc. cit. P. 709.

<sup>d</sup> Aitken. Loc. cit. P. 908.

avoid referring to the practice, or its justifiability, of "prospecting" the liver for abscess which may be supposed to exist therein. At all events, no untoward results, or even unpleasant symptoms, seem to have been reported as following exploratory punctures of this organ, even in cases in which no abscess was discovered. On the contrary, remarkable relief to the symptoms has been noted in many such cases.<sup>a</sup> We would hardly, however, go so far as to agree with Dr. Hammond, of New York, who—believing that hepatic abscesses are much more common in the United States than is generally supposed—recommends "that in all cases of hypochondria or melancholia, the region of the liver should be carefully explored, and that even if no fluctuation be detected, or any other sign of abscess be discovered, aspiration, being a harmless operation, should be performed."<sup>b</sup>

One advantage which the removal of the contents of an hepatic abscess by the aspirator appears to possess over other methods is that the existence or non-existence of adhesions between the capsule of the liver and the abdominal parietes may be disregarded.<sup>c</sup> Consequently, it is unnecessary to adopt the methods proposed by Graves,<sup>d</sup> Bégin, Recamier,<sup>e</sup> Trousseau, Horner,<sup>f</sup> and, more recently, by Prewitt,<sup>g</sup> with the view of causing such adhesions to take place before evacuating the abscess, and thus much valuable time is saved. According to Moorhead, however, the absence of adhesions is quite exceptional. I do not think they existed in my case, as the liver so rapidly receded, without pain, after aspiration of the abscess.

For puncture as practised in Mexico—that is (1) after Jimenez's method, with Vertiz's modification—viz., introduction of trocar and cannula, and always in the intercostal spaces, a drainage-tube being fixed in the cannula; and (2) puncture with the aspirating trochar—it is even claimed that adhesions are not a requisite, but

<sup>a</sup> D. I. G. Cameron, *Lancet*, 1863, Vol. I., pp. 631, 653; and Vol. II., p. 169. Prof. Maclean, *Lancet*, 1873, Vol. II. Surg.-Major Condon, M.D., A.M.D., *Lancet*, 1877, Vol. II., p. 235, et seq. Davis, *N. Y. Med. Jour.*, loc. cit. p. 585. Prof. Palmer, *Lancet*, 1880, Vol. I., p. 709. Andrew Clark, *Med. Times and Gaz.*, 1881, Vol. I., p. 307.

<sup>b</sup> *St. Louis Clin. Record*. June, 1878. And *Lond. Med. Rec.* Aug. 15, 1880. P. 302.

<sup>c</sup> Cf. Bristowe. *Loc. cit.* P. 768.

<sup>d</sup> *Dublin Hosp. Rep.* Vol. IV., p. 40. 1827.

<sup>e</sup> *Dict. de Méd. et de Chir.* Vol. XV., p. 112.

<sup>f</sup> *N. Y. Med. Jour.* *Loc. cit.*

<sup>g</sup> *St. Louis Med. and Surg. Jour.* April, 1878. P. 305.

a detrimental condition. "If the liver is non-adherent," Dr. Davis says, "the abscess-cavity is compressed from all sides, and a gradual closing of its walls takes place. This, together with granulation tissue, soon obliterates it by the union of its opposite walls; whereas, when extensive adhesion exists, no such action takes place, or in an imperfect manner; the inner walls of the abscess continue to form pus, and the patient is gradually worn out by the discharge, or other complications arise, and the patient dies."<sup>a</sup>

That the cavity of an hepatic abscess does rapidly contract in some instances, is proved by a case reported by Assist.-Surg. Jameson.<sup>b</sup> In this case the abscess-cavity contained 72 fluid ounces of pus when first opened, and in four days could not be made to hold more than 18 ounces of injected antiseptic fluid. Cheyne<sup>c</sup> records a somewhat similar occurrence. Maclean<sup>d</sup> too notes that in a case from which 106 ounces of pus were withdrawn by the aspirator, that "so rapidly did the abscess contract that a needle passed near the last puncture some days after the operation did not enter a cavity, but encountered only the solid substance of the gland." A case also is reported by D. I. G. Cameron,<sup>e</sup> in which only two ounces of pus had drained away through a cannula, introduced into a hepatic abscess, when the cannula slipped out and could not be reintroduced. Perfect recovery followed.

The practice of drawing off the pus by instalments<sup>f</sup> would seem to be preferable to the removal of as much of the contents of the abscess as possible, recommended by Jules Simon,<sup>g</sup> and too much aspiratory force should not be used. "The tissue of the liver is very vascular, but firm. If the pus which distends the abscess cavity is forcibly withdrawn by the aspirator, the blood-vessels in the substance of the liver may rupture, and extensive extravasation of blood follow. No abscess of the liver can be safely emptied at one time."<sup>h</sup>

Lately, a method of opening hepatic abscess, which would seem most appropriate in cases of larger abscesses than the one I had to

<sup>a</sup> N. Y. Med. Jour. Loc. cit. P. 583.

<sup>b</sup> Lancet. 29th April, 1871. P. 569.

<sup>c</sup> Dub. Hosp. Rep. Vol. III., p. 66.

<sup>d</sup> Lancet. Vol. II., p. 39. 1876.

<sup>e</sup> Ibid. June 13, 1863. P. 656.

<sup>f</sup> Murchison, loc. cit., p. 189. Sachs. Ziemssen, loc. cit., p. 161.

<sup>g</sup> Dict. de Méd. et de Chir. Vol. XV., p. 112.

<sup>h</sup> Hodgkin. St. Louis Med. and Surg. Jour. May, 1878. P. 384.



deal with, has been practised by Dr. Little,<sup>a</sup> of Shanghai. This consists, first, in aspiration of the abscess, and then making a large opening into it with antiseptic precautions, and subsequent injection and dressing according to Lister's method. The results of this procedure in three cases thus treated by Dr. Little were satisfactory. Of twenty cases treated previously by him without any antiseptic precautions, all died, with one exception. Mr. Lister himself operated antiseptically in a case under the care of Sir Joseph Fayrer, last December twelve months, with complete success.<sup>b</sup> After cutting down on the abscess under the spray, an indiarubber drainage tube was left in the wound, and over this a large dressing of antiseptic gauze. Professor Maclean<sup>c</sup> also is strongly in favour of similar antiseptic treatment. And in cases of large abscesses that cannot be satisfactorily evacuated by aspiration alone, it would certainly appear to give the best chance of a successful result.

ART. XVIII.—*The Use and Abuse of Respirators.*<sup>d</sup> By THOMAS HAYDEN, F.C.P.

FOR many years I have witnessed with a feeling akin to humiliation, because of the ignorance of even the rudiments of physiology, and of the ordinary means of preserving health which it indicates, the exhibition in our streets, during the winter months, of those grotesque and disfiguring appliances called "respirators," the only useful purpose served by which would seem to be, to encourage nervous invalids from chronic pulmonary affections to take exercise out of doors, under the assurance, delusive though it be, of security against cold-catching conferred by them.

I have no doubt that the employment of respirators, as at present used, is not only a ludicrous but a mischievous mistake, and that the protection from cold-catching supposed to be enjoyed under the use of them belongs to the category of popular delusions. Holding this opinion, I venture to think that a brief notice of the subject before this Society may serve a useful purpose.

In order to make my observations intelligible and justify the

<sup>a</sup> London Med. Record. Jan. 1881. P. 8.

<sup>b</sup> Lancet. Loc. cit. P. 633.

<sup>c</sup> Brit. Med. Jour. Vol. I., p. 660. 1879.

<sup>d</sup> Read before the Medical Society of the King and Queen's College of Physicians in Ireland, Wednesday, May 4, 1881. [For the discussion on this paper see p. 547.]

conclusions to which I have been led by reflection and some amount of experience on this subject, it will be necessary to recall to the memory of my auditors a few elementary facts in regard to the nasal and buccal portions of the gastro-pulmonary mucous tract.

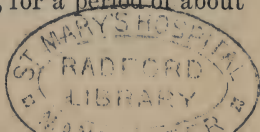
The nasal chambers are remarkable for their irregularity of surface and anfractuosity, and consequently for the enormous area of mucous membrane which they present within a very limited cubic space. This is well exemplified in the nasal cavities of the herbivores, the rodents, and other inferior mammals, and likewise, but in a less degree, in those of man. It would seem that in the construction of the nasal fossæ, as in that of the great respiratory tract of which they form a part, the utmost ingenuity has been employed in extending surface without increasing bulk or weight. [The skulls of a few of the inferior mammals and the ethmoid bone of the human skull were exhibited in illustration.]

In pursuance of this principle, adjacent bones—the superior maxillary, the frontal, the sphenoid, and the ethmoid—are in great part hollowed out, and the chambers so formed, the so-called sinuses of these bones, are brought into direct communication with the nasal passages, and constituted supplementary air-chambers. The upper or nasal portion of the pharynx is similarly utilised.

The entire of this extensive tract is covered with mucous membrane, remarkable for its vascularity and high nerve endowment. The upper or olfactory portion of the nasal surface proper, amounting to about one-half, is provided with an epithelium composed of non-ciliated columnar particles interspersed with fusiform or olfactory cells, whilst the lower half, which is essentially respiratory, is furnished with a ciliated columnar epithelium similar to that found throughout the respiratory tract.

Over this extensive surface, thus supplemented by the accessory sinuses, the eighteen to twenty cubic inches of air constituting the volume of an ordinary inspiration, are dispersed in thin layers and fine streamlets at each act of nasal inspiration, diffusing with the air previously occupying the nasal chambers and recesses, and heated to the temperature of the body by contact with their vascular lining.

It is not at all improbable that the greatest portion of the air which enters the chest in ordinary nasal breathing is thus drawn directly from these chambers, where it had been in process of heating from the preceding act of inspiration—that is, for a period of about three seconds.



This air must be in some degree vitiated by admixture with that of the succeeding expiration, but as the temperature of both must be nearly equal, and the expired air contains a larger percentage of carbonic acid, it is probable that diffusion as between them is comparatively feeble, and the preponderance of it on the side of the lighter and static air lodged in the nasal cavities. That the initial portion of a nasal inspiration is devoted to the process of diffusion, as above described, is shown by the existence of an interval between the commencement of the act and the passage of air through the larynx, distinctly appreciable to those suffering from laryngeal irritation.

The air transmitted through the nasal passages to the lungs is not only raised in temperature, but is also freed in some degree from mechanical impurity by a process of sifting through the cilia of the respiratory portion of the tract, and of fixation by the abundant viscid mucus secreted by these passages. Where such impurity is in excess, as in the case of knife-grinders, coal-miners, wool-sorters, and others engaged in similar avocations, the natural protection thus afforded is not sufficient, and a nasal respirator is required. But under ordinary circumstances the natural provision for nasal filtration and arrest of foreign particles, if made use of, is amply sufficient. The crusts formed in the recesses of the nose, when not due to ulceration, are the product of sifting and deposition as above described.

By contact with the nasal mucus and admixture with the vapour arising from the moist mucous surface, the air inhaled through the nostrils is hygrometrically altered; it is charged with a percentage of aqueous vapour inversely proportioned to its previous hygrometric condition. The advantage of a provision to effect this change, as a mollifying agency, is readily perceived during the prevalence of the dry and parching east-winds by which we are visited annually.

The dry air, if introduced unchanged, would, by causing too rapid evaporation from the bronchial surfaces lower their temperature inordinately, and thus interfere with gaseous interchange within the lungs, and favour the occurrence of bronchial congestion.

A brief glance at the oral and buccal passages in the light afforded by the preceding remarks will enable us to judge how far they are adapted to the purposes of breathing.

The cavity of the mouth and the buccal and laryngeal portions of the pharynx are covered with stratified squamous epithelium,

and, like all surfaces so provided, are, by comparison with columnar and ciliated surfaces, lowly endowed in regard to vascularity and sensibility. There is no subdivision of these passages into anfractuous chambers and recesses, and no multiplication of superficial area by projections and depressions of surface, as in the nasal cavities, nor are the mucous glands at all as numerous and complex as in the latter. Hence a column of air inhaled through the mouth is not searched to its centre, not filtered of foreign particles, and not in an equal degree modified in regard to temperature and moisture as air introduced by the nose. The saliva, indeed, might be supposed to supply the requisite proportion of watery vapour to air passing through the mouth. But air does not furnish an adequate reflex stimulus for the secretion of saliva, as witness the parched state of the mouth and fauces after a night's sleep in those who habitually breathe through the mouth.

During the seven or eight hours usually assigned to sleep no other stimulus than the air of the apartment is ordinarily applied to the incident or excitory nerves of salivation. Hence the parched state of the mouth on awaking.

Respirators, as used in this country, are of two kinds, "oral" and "ori-nasal," the greater number being of the former kind. I have seen only one example of a nasal respirator, and this was a very imperfect appliance. They are all constructed on the same principle, and with the common object of filtering the air inspired, whilst the air expired is supposed to heat the filter, which is composed of wire or silk gauze, or of perforated zinc, encased in wool or cotton padding in most forms of the instrument. [Respirators of various forms were here exhibited.] The air passed in through the filter is supposed to be raised in temperature by contact with it. This supposition is to a certain but only a very limited extent well founded. The heat is *borrowed*, the pores of the filter are too short, and the contact of the expired current with them too brief, to admit of caloric being retained sufficient to notably raise the temperature of the air next inspired. Furthermore, the trivial advantage thus gained by the use of the oral respirator is more than neutralised by the defects above described as inherent in the mouth and pharynx as a respiratory passage.

The use of a purely nasal respirator would be more rational, but such a form of the instrument has not been, as far as I know, devised, with the exception of the imperfect example already referred to. Nor can it be deemed necessary, except in the case of



extreme invalids whose circulation and calorific power are at the lowest ebb; and these may use with greater advantage a muffler, which also protects the neck.

The nasal passages are the natural channels for the entrance and exit of air; and if judiciously employed they are, as air passages, adequate to the purposes of respiration under most circumstances, unaided by an artificial appliance of any kind. By the qualification above implied I would be understood to refer to the necessity, in the case of susceptible persons, of graduating the temperature by breathing through a handkerchief or muffler, or even through the gloved hand, for a few seconds on passing from warm into cold air, and, in case of continued exposure to a cold draught, of breathing through a muffler while so exposed.

Such persons should preserve in every way the freedom and integrity of the nasal mucous membrane as a respiratory organ. Hence they should not take snuff, and should avoid as far as possible a dusty and smutty atmosphere. They should also avoid chills, and maintain, through suitable clothing and other obvious means, warmth of the general surface of the body. The growth of a full beard should be encouraged, as serving in a subordinate sense the purpose of a natural respirator.

I have already adverted to the use of respirators as dust-filters, under circumstances of habitual and protracted inhalation of air charged with fine sharp particles of solid matter, as in certain mechanical avocations.

This is the only useful and rational purpose served by respirators, but they should be constructed of the finest wire-gauze, incapable of rusting, and without padding of any kind; they should be frequently cleansed by washing or by soaking in water over-night, and accurately fitted to the nostrils exclusively. The wearers should be strictly enjoined to breathe through the nose only.

A further evil arising from the use of oral respirators is the habit which it entails of breathing through the mouth when they are not in use, as in mild weather and during sleep. The sheep, the ox, and other ruminants, cannot breathe by the mouth whilst browsing and chewing the cud. These animals breathe through the nose exclusively; and it is notorious how seldom they suffer from inflammatory affections of the lungs notwithstanding their exposure to the cold air by day and by night at all seasons.

In the preceding observations I have, as it seems to me, shown cause for arriving at the following conclusions, viz. :—

The nasal passages are the natural channels for the introduction of air into the lungs, and its expulsion therefrom; they are, by their construction and organisation, admirably adapted to serve as such, and, if judiciously employed and in a healthy condition, are adequate for this purpose under the varying conditions of weather and climate unaided by artificial appliances of any kind.

The mouth and fauces constitute the natural passage for aliment; they are not designed for use as air-passages, and should not be employed to supersede the nares in breathing.

By their communication with the larynx they are, however, obviously designed to serve as alternative air-passages, supplementary of the nares when the latter are obstructed, or from any cause incapable of conducting air to the lungs.

The use of oral respirators is based upon a misconception of the functions of the mouth in regard to respiration, and they should not be employed, because they are not only unnecessary, but positively mischievous, by the habit which they induce of breathing through the mouth.

Nasal respirators may be useful, under special circumstances, to exclude dust from the air-passages.

Muffle-respirators may be used to protect from draughts of cold air, but the muffler alone will serve equally well for this purpose.

Finally—respirators for the occasional exhibition of certain medicines by inhalation are often useful, and may for this purpose be either oral or nasal.

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ART. XIX.—*Extra-Capsular Fracture of the Neck of the Femur.*<sup>a</sup>

By ALEXANDER GORDON, M.D.; Professor of Surgery, Queen's College, Belfast.

AN extra-capsular fracture is defined as a fracture of the neck of the femur external to the capsule. It would, however, convey a more accurate idea of the nature of the accident to define it as a fracture through the base of the neck. Usually in front the fracture runs along the anterior inter-trochanteric line, above where the neck joins the apex of the trochanter, thence internal to the digital fossa, and downwards along the internal margin of the posterior inter-trochanteric line, till it passes through or above the lesser trochanter. The fracture is thus seen to follow a course which corresponds to the circumference of the base of the neck,

<sup>a</sup> Read before the Ulster Medical Society, Session 1880–81.

which is quadrilateral in form, as described by anatomists, and widens slightly in its antero-posterior diameter as we proceed from above downwards. When a person advanced in life falls upon the outer part of the great trochanter, the limb comes to be at rest; the weight of the body through the pelvis being in projectile force strikes the head, and drives the base of the neck into the trochanter. The direction of the force is nearly parallel to the long axis of the neck, and in the direction in which the neck is mechanically strongest and its base weakest. I have no hesitation in stating that this is the mode in which the extra-capsular fracture is produced. If we examine carefully a good collection of these fractures it will be found that no two of them are exactly alike, differing slightly from each other, but generally presenting a remarkable resemblance. In all of them the fracture may be said to consist of three fragments—one formed by the head and neck, a second by the apex of the trochanter, the posterior inter-trochanteric ridge, and more or less of the outer and posterior part of the trochanter, and the third by the upper end of the shaft, with a portion of the trochanter attached. If the reader has before him a femur, and if he draws horizontally a figure, leaving the curve of the outer surface of the trochanter extending from the anterior to the posterior inter-trochanteric line, this figure will approach closely to a semicircle. Draw across this semicircle a diameter, which may be regarded as the base of the neck. It will be at once seen that the diameter or base of the neck can scarcely penetrate the semicircle without tending to flatten it more or less. If a force be applied to the diameter or base of the neck which drives it into the semicircle or trochanter, the effect of such a force will be at once apparent. In the act of breaking, the base of the neck or diameter widens the semicircle, and the broad base of the neck widens the diameter of the trochanter, which then rapidly diminishes. The effect will be a fracture of the trochanter varying in different cases according to circumstances, such as the direction, amount of force, and the fragility of the bone. Women are much more subject to extra-capsular fractures than men, for several reasons—1. Females generally lead a more sedentary life, and therefore their bones are more atrophied, and are, in consequence, more easily broken. 2. The angle approaches more nearly to a right angle than in males, and therefore a force acting on the trochanter has more power in driving the base of the neck into the trochanter. 3. As we advance in age, the posterior inter-trochanteric

ridge becomes widened, and the angle of reflection of the compact tissue becomes more a right angle, and penetration is thereby facilitated. Old age is the main predisposing cause of both extra- and intra-capsular fractures, and the comparative frequency is owing to the manner of falling. Falls upon the trochanter are the most common causes of this accident. The extra-capsular fracture will be found to be more frequent in extreme old age than the intra-capsular. If the direction of the force be parallel, or nearly so, to the axis of the neck, the fracture will be found to be extra-capsular. On the other hand, if the force has been at right angles to the axis of the neck, as in forcible abduction of the limb, the fracture will be the ordinary intra-capsular, and from the nature of the force attendant there will be great laceration of the periosteum; and for want of the periosteum there will be upward and downward movements as well as those of rotation, and on this account there will be no osseous union. If a force be applied from before backwards, or at right angles to the neck, there will be a trifling laceration of the periosteum and osseous union, if matters have not been aggravated by attempts to elicit crepitus by rotation and extension to enable us to diagnose a fracture. The weakest point of the neck of the femur, to a force applied at right angles to its axis, is at the point where it changes from the quadrilateral to the circular form; this is about one-third of an inch from the head, and is the weakest point of the neck when force is applied with the limb abducted.

In leaping, the extremities are approximated, and the weight of the body at the ilio-femoral articulation is received upon the upper and outer part of the head of the femur, through which it is obliquely transmitted thence to the inner surface of the neck. The chief force of the shock is received by the lower part of the base, between the lesser trochanter and the ridge which forms the boundary between the anterior and internal surfaces of this part. But the upper end of the femur is bent forwards, the effect of which is to strengthen this part of the bone in a remarkable manner against shocks, which are thereby diffused over the strong base of the neck internally, and also over the anterior and internal ridge and the compact tissue forming the anterior surface of the upper end of the shaft. The effect of the momentum from leaping or lifting heavy weights is to force the head into the acetabulum and diffuse the shock against that part of the neck and upper end of the shaft to which nature has given it special strength to resist.



If we now direct our attention to the upper and posterior part of the neck it will be at once apparent that this part of the neck suffers very little pressure. I think, when the limbs are approximated, and when force is applied vertically to the upper end of the femur, it is not likely to suffer either dislocation or fracture. I have not met with a single instance of extra-capsular fracture caused in any way but by a fall on the great trochanter. Abduct the femur even to a slight degree, the point of impact becomes more external, and the weight of the body falls upon it almost at a right angle to its axis, and breaks easily—the production of the ordinary intra-capsular fracture being the result. The specimens which I have of extra-capsular fracture resolve themselves into *five Forms*, each of which presents some character slightly differing from the others, thus affording us an explanation of the various signs which might puzzle us in forming a correct diagnosis if we took only a general view of the accident.

*First Form.*—In the first form the force is received upon the upper and posterior part of the base of the neck, which gives way, and at the same moment the fracture in front takes place. Above and behind, the line of fracture varies very little, but in front it may pass through the anterior inter-trochanteric line, external to it or even nearly to the outer border of the anterior surface. Below, it passes into or above the lesser trochanter.

The trochanteric fragment is small in comparison to that of the second form. The eversion of the limb is usually well marked, but sometimes to such an extent that the toe looks directly outwards. If we examine a specimen of this form the rotation outwards of the shaft of the femur upon the neck appears so plain as not to admit of doubt. This theory has always appeared unsatisfactory to me. I have taught for many years that the eversion was due to the rotation of the shaft of the femur upon the base of the neck. I always thought that there was more than I had observed. I therefore determined to pursue my inquiries by commencing with the cause of the accident. All my inquiries taught me that it was produced by a fall upon the outer surface of the femur. The extremity is usually extended, and lying with its outer surface upon the ground. The extremity will be fixed, and cannot turn outwards, as the outer margin of the foot lies in contact with the ground. Therefore, so far as inquiry into the history of the accident was concerned, the theory of rotation outwards of the shaft upon the base of the neck was no longer tenable. It is a

physical impossibility. I next commenced an examination of the specimens. I took the sound femur, and placed it on its anterior surface, with the aspect of the *linea aspera* looking directly towards the ceiling; then, taking one of the specimens in which there was the greatest amount of rotation outwards, I was surprised to see that the aspects of the head and *linea aspera* were the same, and that in the specimens the head had undergone a rotation backwards to a little more than a right angle, probably to the extent of  $92^{\circ}$  or  $93^{\circ}$ . Other specimens showed similar rotation, varying in amount from  $30^{\circ}$  and upwards. This examination revealed the true explanation of the eversion in this accident. It is not a rotation of the shaft of the femur upon the neck, but of the base of the neck upon the shaft, whilst it lies with its outer side on the ground, fixed by the weight of the body and in contact with the ground. The theory of eversion of the extremity by rotation of the shaft upon the base of the neck is therefore untenable, as the position of the limb renders such rotation impossible. When the patient falls upon the outer surface of the thigh the extremity comes to be at rest, and the head of the femur looking upwards receives the weight of the pelvis on the inner side of the head, which from its position looks directly upwards; the weight thus received upon the head is transmitted through the neck to its base—that being the weakest part to a force thus applied—gives way, and breaking penetrates the trochanters. The neck being broken, the pelvis losing its support falls backwards, carrying with it the head, causing rotation from before backwards of the base of the neck upon the shaft. This rotation will continue until the posterior surface of the pelvis comes in contact with the ground.

In order to form a true estimate of the views set forth regarding the mode by which the fracture is produced, and to explain its various forms and their signs, let the femur be placed on its outer surface, the head will look upwards, and it will also be extended, and whatever movement takes place at the ilio-femoral articulation will be that of the pelvis upon the head. The momentum of the pelvis will be received upon the head, and transmitted from it to the neck, and thence to the base of the neck. It must always be borne in mind that the head fits accurately into the acetabulum, and also that the momentum of the pelvis will be transmitted in a line perpendicular to the point of impact. As the head receives a general support from the acetabulum, it is not broken, though it may be in a state of extreme atrophy. When the pelvis is placed

upon the head, with its inlet looking upwards and forwards, the point of impact will fall behind the axis of the neck, and the fracture will be the *First Form*. If the inlet looks directly forwards, the impact will be in front of the axis of the neck, and the *Second Form* will be the result. If the ground upon which the patient falls inclines downwards, the upper part of the neck will receive the greatest shock, and deep penetration of the neck above will take place, with an increase in the angle of the neck. This unnatural increase of the angle of the neck is the main ground upon which the *Third Form* is based. If the impact be upon the lower part of the head, the lower part of the base of the neck will receive the greatest degree of shock, and the base, being dense at this part, splits the shaft, and produces the *Fourth Form*.

A very slight movement of the pelvis upon the head of the femur, in the various directions above mentioned, suffices to throw the shock upon the back, fore, upper, or under part of the neck respectively, producing fractures having results widely different from each other. I may here remark, that although the various forms of fracture of the base of the neck may be primarily the same, yet the secondary or subsequent lesions and displacements will be very different, according to the direction and amount of force and the fragility of the bone.

In this, the first form, when the patient is placed supine, we see that the injured thigh is in a plane anterior to that of the other side to a greater degree than in any of the other forms, while the limb is shortened and the toes very much everted, and the upper end of the shaft nearer to the anterior superior spine of the ilium, resembling in a remote degree the approximation that occurs in dislocation, upwards and backwards on the dorsum ilii, but with the toes remarkably everted. That this accident could be mistaken for a dislocation on the dorsum ilii is difficult to understand, as in fracture the outer surface of the femur and external condyle look backwards and outwards, whereas in a dislocation it looks forwards and inwards; and to produce the amount of rotation outwards in the healthy femur would require the head of the bone to have left the acetabulum and be placed on the pubes. In most instances of this form of fracture the neck forms a right angle with the shaft, but in some the angle is not much altered, but the anterior aspect of the neck, instead of looking directly forwards, looks forwards and upwards, the neck being rotated on its axis as much as  $15^{\circ}$  or  $20^{\circ}$ . The fracture through the base in front is

external to the anterior inter-trochanteric line, where it might be easily felt very prominent behind and external to the tendon of the rectus femoris muscle. This prominence with the fulness in the groin is so easily felt, and contrasts so remarkably with that of the opposite side, that the diagnosis might be based upon it alone. As the base of the neck has penetrated behind obliquely outwards and forwards, the trochanteric fragment is usually not large, nor is it displaced much out, but a little backwards and mostly inwards, lying within a short distance of the head and acetabulum; but this inward displacement of the trochanteric fragment is more apparent than real, for were we to deduct the amount of penetration by the neck it will be found very little displaced—therefore prominence of the base of the neck in front, widening and displacement of the trochanteric fragment, would be diagnostic.

*Diagnosis.*—So the diagnostic signs of this, the most frequent of all the forms of extra-capsular fracture, are as follows:—

1. The history of a fall on the great trochanter.
2. Well-marked shortening.
3. Eversion of the foot.
4. Prominence of the base of the neck easily detected by manual examination, external to, or behind the tendon of the rectus femoris muscle.
5. Increase of the antero-posterior diameter of the upper end of the femur.
6. Pain on pressure at the upper part and front of the shaft.
7. The shaft is approximated to the anterior superior spine of the ilium.
8. The injured femur is on a plane anterior to that of the opposite side.

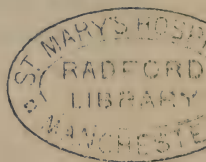
Although this form scarcely presents a single sign in common with dislocation of the head of the femur on the dorsum ilii, yet, as the latter is the only luxation with which it is possible to confound it, subjoined I give the differential diagnosis:—

*Extra-Capsular Fracture.*

1. *Cause.*—A direct fall upon the trochanter.
2. Most common in advanced life.
3. Foot much everted, sometimes pointing directly outwards.
4. Limb shortened.

*Dislocation on the Dorsum Ilii.*

1. *Cause.*—Forced rotation inwards of the femur.
2. Extremely rare, almost unknown in advanced life.
3. Foot inverted.
4. Limb shortened.





5. The head may be easily shown to be within the acetabulum by gently flexing and extending the femur by the hand placed behind the lower end of the femur.
6. The outer surface of the trochanter looks backwards.
7. The base of the neck may be felt prominent in front, and there is great increase in the antero-posterior diameter of the trochanter.
8. Acute pain on pressure along the line of fracture, in front, above and behind.
9. The displacement of the trochanteric fragment may be easily felt by passing the fingers along the posterior branch of the *linea aspera*.
10. A groove may often be felt when the trochanteric fragment is separated.
11. The inter-trochanteric line behind cannot be felt.
12. In cases of great eversion of the foot in aged persons, from a fall upon the great trochanter, this form may be diagnosed, as in none of the other varieties does the same amount of eversion take place.
5. The head rests on the dorsum ilii behind and above the acetabulum, and the movements are restrained and difficult.
6. The trochanter is approximated to the anterior superior spine, its outer surface looking forwards.
8. No pain, or very slight pain, when pressure is made over the posterior part of the trochanter.

*Treatment.*—I have often asked myself, as well as others, upon what principle can a long splint be serviceable in this form of fracture? The head and neck are firmly fixed in the acetabulum, by the capsular ligament. The base of the neck is deeply driven into the cancellated tissue behind, whilst it is prominent in front. The trochanteric fragment, to which are attached the gluteus minimus, pyriformis, the internal and external obturators, is

approximated to the acetabulum behind, and is fixed in this position by these muscles, and the only medium of connexion between it and the shaft is the tendon of the gluteus medius and fibrous tissue on the outer surface of the trochanter. The foot being greatly everted, in order to apply the splint we must rotate it so as to make it look forwards. Now in this movement the base of the neck forms the fixed point upon which the shaft must move in this rotation, thereby separating the base of the neck entirely from the trochanter, except in front. The limb being shortened, when extension is made it separates the shaft from the head and neck, which is fixed by the capsule, as already stated. The trochanteric fragment being also fixed by the muscles previously mentioned, would also be separated by extension; indeed the effects of extension would be to draw the three fragments from each other, and render a limb which would otherwise be useful into one that was comparatively useless. I could hardly conceive a more useless or irrational practice, and one without a particle of sound anatomical knowledge in its favour, not to speak of confining the patient in a recumbent posture, thereby entailing certainly very serious consequences, and often fatal results.

The treatment which I have adopted is that of putting the patient into a comfortable and easy position, and allowing him to move as he may wish. I know of no instance in which the fragments were detached or separated from each other by any rash or imprudent movement on the part of the patient. The accident is usually extremely painful, and any movement made by the patient aggravates that pain, and therefore when they change their position, to relieve the organic suffering from pressure, they do so with the greatest gentleness and caution. Some will experience the greatest relief by lying midway between the side and back positions, the outer and posterior surface of the femur resting on and supported by the bed; others cannot suffer the limb to be extended, but will have it bent at right angles to the pelvis, as affording to them the greatest freedom from pain; others will adopt an intermediate position. The rule which I adopt is to let them select their own position, and support the limb as they find it most comfortable.

ART. XX.—*On the Experimental Study of Disinfectants.* By J. LANE NOTTER, B.A., M.Ch., M.D., Univ. Dubl.; Diplomate in State Medicine, Trin. Coll. Dubl.; Surgeon-Major, Army Medical Department; Assistant Professor of Military Hygiene in the Army Medical School, Netley.

IN *The Dublin Journal of Medical Science* for September, 1879, I published a paper giving the results of a series of experiments on various disinfectants, and, from time to time since then, I have repeated several of these experiments with similar results.

In that paper I defined a “disinfectant” to be an agent which destroys by chemical action not only the decompositions which are casually connected with the presence of organisms, but the organisms themselves. The difficulty which is ever present in determining the actual causation of disease—whether it is generated *de novo* in any accumulation of filth, or whether it invariably springs from a previous case—is perhaps one of the chief reasons why the meaning of this term remains so vague. Unfortunately in an inquiry like the present we have to depend nearly altogether on indirect methods to find out whether the spread of infectious diseases is limited by the use of disinfecting agents, while there is no direct test available to solve the problem. Of the ultimate origin of contagium we know little or nothing, yet we have sufficient indirect evidence to show that the contagia consist in some instances of a solid particle or germ. Messrs. Braidwood and Vacher prove this by what seems indisputable evidence. They tell us that we possess the strongest indirect proof that the contagium of the virus of vaccine consists of transparent particles, soluble neither in water nor in watery liquid, and not capable without losing its properties of assuming the form of vapour. It has been, I think, assumed by far the greater number of pathologists that specific contagia, so far from being of an extremely delicate and subtle nature, really consist in solid particles. But, may I ask, what proof have we that they cannot exist in any other form, or that the material of these very bodies did not circulate in the blood of the living body in a dissolved state, and, as such, were capable of being thrown off by transpiration? To the views held generally with reference to solid particles or germs I do not object—nay, there is very much to commend such views, borne out as they are by experimental facts; but why limit contagium so far, and why can it exist in no other form?

Carefully prepared diffusion has failed to rob these particles of their morbid power, and the same may be said of the altered fibrin of infective inflammation—in truth, we have yet to find out what contagium is, or really becomes, in its active state. We know how difficult a matter it is to dissolve coagulated albumen or fibrin; and is not diffusion in a test tube very different from diffusion in the blood?

Nor is this all; for it cannot now be denied that the tendency of every albuminous mass, be it in whatsoever condition it may, is to become globular—and this form appertains especially when we have to deal with a colloid mass of animal origin. Its attractions are central, not axial, and therefore it assumes the globular form; and if, as has lately been suggested, the three visible states of matter—the solid, the liquid, and the gaseous—are the only states, the action of force tending to the necessary production of one or other of these states, and that the gaseous is the disintegrated form of matter, surely we have an additional plea for taking a more extended field of vision, and, while recognising the spore or germ as the offending particle, yet not limit our disinfecting agents so as only to attack this one form of infection, as if no other was capable of existence.

In the experiments noted in my former paper we know for a fact that the putrefactive odour was not due to the decomposition of vegetable or animal matter, but that it was evolved by the active development of the bacterium termo itself, and that it is the sole producer of the principles yielding that odour; therefore it is not unreasonable to conclude that the morbid energy is resident in the products, and that these are capable of being absorbed and of producing specific disease. The fact seems to be, that we attribute too much to the coincident appearance or occurrence of microscopic forms with certain diseases, and ignore purely chemical causes though involving organic matter. If we accept the germ theory alone, we are of necessity forced to dismiss all agents which will not destroy these organisms, fermentations, or putrefactive bacteria, while those who believe that contagium may exist in other and perhaps more subtle forms, capable of being diffused and volatile in part, or perhaps propagated (as in water) by albuminous substances in a state of molecular change, will naturally lean towards those agents which are capable of oxidising them.

The action of disinfectants on schizomycetes is generally admitted by most observers to afford an index of the disinfecting



power of the agent, and assuming that some of these have but a slight effect on the solid particles, yet such may not be the case with the gaseous form, *always provided* that the vapour liberated is of sufficient strength.

Under these conditions contagium liberated by transpiration and diffused in the air may be corrected by the use of proper disinfectants. Hitherto we have based our argument almost entirely on the effect disinfectants produce on solid particles in a liquid medium, but we have no experimental proof of any results of this on the gaseous form.

In advocating thus far aerial disinfectants it must be distinctly understood that, as ordinarily practised in the sick room, they are positively useless. To place carbolic acid or permanganate of potassium in solution in small quantities in a saucer in the corner of a room is utterly worthless, so far as any effect it produces on specific contagia; the quantity diffused being wholly inadequate to the object in view.

Aerial disinfection, when resorted to, must be carried out in its minutest details just as carefully as when we are dealing with liquid disinfectants, and the proportions of the agent used and the size of the room it is proposed to submit to its action carefully balanced, so as to ensure destruction of the poison. Of all the agents recommended I found nitrous acid by far the most effective.

The following experiment was repeated several times, and gave the same results each time:—Two ounces of copper wire, which was well cleaned, were treated with 50 cubic centimetres of concentrated nitric acid, in a chamber with a cubic capacity of 53 feet, yielding however only 0.35 per cent. of nitrous acid.

A saucer containing 100 cubic centimetres of decomposing infusion of beef, full of active bacteria, was placed in the chamber with the nitric acid and copper-wire mixture, and the effect was most decided, reducing the activity of the bacteria, while the fluid was rendered strongly acid.

The same preparation after forty-eight hours, examined microscopically, showed still a diminished activity. The bacteria were largely precipitated, and the fluid was free from all putrefactive odour. The fluid in another test-saucer, on the other hand, was opaque and clouded with active bacteria, the putrefactive odour being very offensive.

Examination on the third day showed still no tendency to the further development of bacteria, and the fluid remained quite

inodorous. The test-saucer having been introduced into the chamber, with a further addition of 35 cubic centimetres of strong nitric acid, gave evidence of considerable improvement after the lapse of forty-eight hours, and, no doubt, would have been quite corrected by a further exposure to the nitrous acid fumes. Both these infusions examined after the lapse of a week showed no change for the worse.

These experiments clearly prove, I think, that in nitrous acid we have a chemical agent which will arrest the development and further reproduction of septic microzymes, and which is therefore capable of destroying contagion.

ART. XXI.—*Ozæna*.<sup>a</sup> By KENDAL FRANKS, M.D., Univ. Dubl.; F.R.C.S.I.; Surgeon to the Adelaide Hospital, and to the Throat and Ear Hospital, York-street, Dublin.

IN treating of the subject of ozæna in general we must distinguish between two classes of morbid conditions in which fœtid nasal breath is a prominent symptom. I exclude at once all cases in which the fœtor is due to diseases in the deeper structures of the nasal cavity, as ulceration, caries of the bones, and abnormal growths, or when foreign bodies are the immediate cause.

But, independently of these, we find two distinct classes—one in which the ozæna is due to some lesion of the mucous membrane, most frequently the result of a dyscrasia; the second class comprising those cases in which there is no such lesion to which to attribute the disease, or in which an altered state of the mucous membrane is the result of the ozæna, and not its cause. This form has till the last few years been apparently quite overlooked, and it at present forms the subject of an interesting and animated controversy with our Continental brethren. It is to this latter form that I desire to call your special attention.

In all the standard works in which the subject of ozæna is discussed we find no allusion to this form of the disease. In Ziemssen's *Cyclopædia*, ozæna, the "Stinknase" of the Germans, the "punaisie" of the French, from its fancied resemblance to the smell of crushed bugs, is classed under the same heading as chronic rhinitis, and it has origin accordingly in a dyscrasia. "Acute rhinitis," Fraenkel tells us, "may pass into the subacute or chronic forms, and yet in the vast majority of cases this *only takes place in*

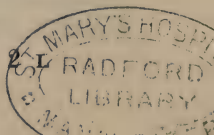
<sup>a</sup> Read at the Meeting of the Dublin Biological Club, April 5, 1881.

persons suffering under a *dyscrasia*. Scrofula and syphilis are particularly liable to induce this transition. . . . We can distinguish two forms of chronic catarrh in the nose—the hyperplastic and the atrophic forms. They often coexist, but in most cases the atrophic form seems to be the result of the hyperplastic; at least it is most commonly found in old cases, and after the prolonged continuance of the hyperplastic.” This is the order of events which we find in the pharynx:—The three stages of chronic follicular pharyngitis are repeated in the nasal cavities, beginning as a chronic catarrhal pharyngitis, going on to hypertrophy of the follicles and mucous membrane, and finally, as the follicles wear out, the retrograde process taking place, and atrophic pharyngitis or pharyngitis sicca being the result. In the nose we have the same sequence—a chronic rhinitis is established. This is the result of an acute attack occurring in persons presenting other symptoms of dyscrasia; or “in persons having no dyscrasia, an acute rhinitis under bad care, continuance of the irritant, and other injurious influences, may relapse and finally terminate in the chronic form.” This chronic form is at first of the hypertrophic kind, the mucous membrane being thickened and red, the secretion being of a muco-purulent character, and abundant in quantity. Morgagni relates a case in which it amounted to an ounce per hour. Should the mucous membrane be sufficiently tumefied to cause obstruction of the nose, the secretions are retained and by degrees decompose, their decomposition giving rise to the fœtor of ozæna. This, however, is not a very frequent occurrence during this stage of the disease. It is in the later stage, when the hyperplasia gives place to atrophy, that this symptom declares itself with all its unpleasant consequences. To this latter stage Gottstein applies the term, “chronic atrophic rhinitis.” Robinson, in his recent work on “Nasal Catarrh,” calls it “the dry form of chronic coryza.” It seems to be brought about in the following way:—During the hypertrophic stage there is deposited in the deep layer of the mucous membrane new formations of connective tissue and hyperplasia of the normal elements found there. This new tissue so presses upon the glands and follicles that their function is almost if not entirely destroyed, and they consequently atrophy, or as the inflammatory products become organised and contract, they so constrict the glands that atrophy is the result. In proportion to the activity or intensity of these processes is the rapidity with which these changes occur; and hence, though we generally

find the atrophic stage coming on at a late period after the hypertrophic stage has existed for years, still we need not be surprised if we find them coming on at a comparatively early epoch, so that the early stage of enlargement of the glands, thickening of the mucous membrane, and abundant secretion, may almost be overlooked. The appearance of the nasal passages and of the nasopharyngeal space is very characteristic. The first thing we observe is an abnormal dryness of the mucous membrane in these regions. It has a glazed, parchment-like appearance, and is covered with inspissated mucus. This is very thick, and has a tendency to form crusts:—"These," says Fraenkel,<sup>a</sup> "become firmly attached to the subjacent surface, perhaps owing to the large amount of albumen they contain, and by reason of their wealth in morphological elements (numerous epithelial cells) and their dearth of fluid constituents, are easily dried by the air passing over them." The tenacity with which these crusts cling to the mucous membrane beneath is exhibited when trying to remove them—sometimes they resist even a stream of water directed against them; and this tenacity is characteristic also, though in a less degree, of the dry pellicle of mucus which has not gone so far as to form crusts. The amount of secretion is very great, and is poured out as thick viscid mucus. It, however, rapidly dries, and if retained, as it will be unless proper means be used to get rid of it, it decomposes and gives rise to the characteristic stench. Fraenkel attributes the retention and drying of the secretion to the abundance of cells, the paucity of water, and its stickiness, but considers that defective cleaning of the nose aids in accomplishing the result:—"This may be owing to habitual failure to blow one's nose, to feebleness of the expiratory current of air at the point affected (stenosis), or to diminished reflex irritability and an absence of a disposition to sneeze." Cohen, in his lecture on Naso-pharyngeal Catarrh,<sup>b</sup> takes a more histological view of the case when he attributes these conditions to a destruction of the epithelium. I need scarcely remind you that the epithelium lining the respiratory tract, with a few exceptions, is of the ciliated variety, and that the cilia have a continuous waving motion towards the exterior. In the nasal passages these cilia are continually brushing away excess of mucus. The diseased condition of the mucous membrane in chronic rhinitis causes destruction of numbers of the ciliated epithelia, and these

<sup>a</sup> Ziemssen's Cyclopædia. Vol. IV., p. 138.

<sup>b</sup> Medical News and Library. October, 1879.





are not reproduced. Hence this *potent* cause, according to Cohen, is absent, and retention is the result.

On removing the dried mucus and crusts from the surface, the mucous membrane has a remarkable appearance—it is reddened, the result of the cleansing process, and looks dry and raw. Looking up into the naso-pharynx, by means of the rhinoscope, the same condition is seen, and tumefied masses of glands and follicles are visible on the vault and sides. The posterior portions of the turbinated bones present the same dry crusts and pledgets of mucus, and sometimes an entire turbinated bone is covered over as if with a false membrane. Anteriorly the same appearance is seen. The turbinated bones are distinct and normal in size, the mucous membrane covering them thin and atrophied, the secretion dry and encrusted. The symptoms which this condition gives rise to are similar to those observed in the next class of ozænæ, to which I will now call your attention.

In this class of ozænæ no lesion is found, no disease of the mucous membrane, to which this disagreeable condition can be assigned; cases in which there is no previous history of a catarrh, or of a period at which there was an abundant odourless discharge. To account for such cases, to determine the true cause for a most pungent symptom, where to all appearance no disease exists, has been the endeavour of several astute observers in Germany. Several, among whom I may mention Gottstein, have attempted to class these cases under the third or atrophic form of chronic catarrh; but this is eminently unsatisfactory, as there has never been a second or third stage—and for other reasons to which I shall have occasion to refer again, I pass by this opinion as untenable. There still remain two views, which have been put prominently forward by their exponents. The first we shall consider is that propounded by Michel.<sup>a</sup> Recognising the fact that the mucous membrane of the nose and pharynx is more or less healthy, and that its condition is quite insufficient to account for the ozæna, he lays emphasis on the exceeding abundance of the discharges. The mucous membrane of the nasal passages he considers is incapable of secreting so abundantly; for, if altered, it is on the side of atrophy. Whence then does the discharge come? Evidently not from the nose, but from the accessory cavities. The only cavities which could be the cause of it are the sphenoidal and ethmoidal sinuses,

<sup>a</sup> *Maladies du Nez et du Pharynx Nasal.* Berlin, 1876. Traduction Franç. Par A. Capart. Paris, 1879.

since anatomical considerations preclude the other sinuses from being the chief factors. Thus the opening of the antrum into the middle meatus of the nose is situated in the upper part of the internal wall, so that any flow of mucus from it could only be by overflow, and there are no evidences that the antrum is full of fluid. The frontal sinuses could not discharge fluid on to the upper surface of the middle turbinated bone, where it is seen to exist, as their openings into the nose are situated below the anterior extremity of this bone. Hence he concludes that a chronic catarrh exists in the sphenoidal and ethmoidal sinuses, which by retaining the secretions allows them to decompose, and by then discharging them over every portion of the nasal cavity gives rise to ozæna.

Now this theory, which is very plausible, is not sustained by facts. In the first instance, the grounds on which it is based are hypothetical, for the author has failed to demonstrate that any catarrh of these sinuses does actually exist; whilst, on the other hand, in a well-marked case of the disease, Hartmann, who made a *post mortem* examination, could detect no abnormal condition of these cavities.

The second view enunciated is by Zaufal,<sup>a</sup> and the cases which I shall lay before you seem to me to support this view. He states the case thus:—This class of ozænæ, in which no lesion is found, affects children, and especially girls arriving at the age of puberty. The parents usually state that the fœtor began to show itself within the last few months. The child finds great difficulty in blowing its nose, and the particles emitted are composed of horribly fœtid, greenish crusts. The young patient is pale and dispirited, complaining sometimes of cephalalgia. The scrofulous diathesis is not specially marked; the nose is flattened, the septum is deflected to one side, so as to compress the lachrymal canal and cause epiphora. The alæ nasi are enlarged, but the nasal fossæ specially have a remarkable aspect to those who are well acquainted with their usual appearance. Instead of the normal narrowness of the passages between the septum nasi and the middle and inferior turbinated bones, a true cavern is seen to exist, due to the almost complete absence of these two turbinated bones, especially of the inferior, which are reduced to mere ridges, thus exposing to view the trumpet-shaped opening of the Eustachian tube, all the movements of which during phonation and deglutition are clearly seen. The whole septum and back of the pharynx are well exposed.

<sup>a</sup> Aerztliches Correspondenzblatt aus Böhmen. No. 23. 1874.

Abundant semi-inspissated or dried crusts cover over the various parts, and if they be removed by irrigation the mucous membrane beneath is found to be reddened, but without any trace of ulceration. At the same time it seems to be atrophied. Over the inferior turbinated bone the erectile structure has disappeared, and a probe comes into immediate contact with the turbinated bone. This characteristic conformation may exist only on one side, or it may be hereditary, the mother who brings the child having a nose formed absolutely in the same way.<sup>a</sup>

Michel, who has seen this condition and recognised it, in holding to his own view, does not consider the malformation sufficient explanation of the disease; whilst Gottstein considers that the small size of the bones is part of the general atrophic process which goes on during the third stage of the catarrh. But then Michel's theory does not explain why the ozæna should be hereditary, why it appears always at puberty, or why it may sometimes be unilateral; and Gottstein does not state why in some cases of atrophic catarrh the turbinated bones do *not* share in the process.

On the other hand, Zaufal maintains that this excessive arrest of development explains these points, as well as accounting for the occurrence of ozæna. The ozæna is simply the result of the size of the nasal fossæ. The mucous secretions are no longer driven forwards little by little, as takes place in the normal condition when the expired air plays on the turbinated bones. The air goes out more slowly; the mucus, no longer drawn with it, retains its position and decomposes. Moreover he points out that there is not an abnormal increase in the secretion, as stated by Michel, but that it is only apparent, and results from the fact that the patient cannot blow his nose. The disease does not make itself apparent in early life. The child is born with rudimentary turbinated bones. During the first few years, the nose being very small, the disease does not declare itself; but, as the child grows, the bones of the face gradually develop, the turbinated bones remain stationary, and at or about puberty ozæna appears.

The retention, drying, and decomposition of the secretion on the surface of the mucous membrane reacts in an injurious way on this membrane, with whose function it interferes, and thus causes it to undergo a process of atrophy more or less pronounced, so that this atrophy, instead of being the cause, is in reality the consequence of the ozæna.

<sup>a</sup> Hayem. *Revue des Sciences Médicales*. Avril 15, 1880.

The first case of this affection came under my notice for the first time in 1877:—

CASE I.—K. H., aged twenty-one, a healthy-looking girl from the county Wicklow, applied at the Throat Hospital on October 27, 1877, for ozæna, bringing a recommendation from Dr. Swanzy. As long as she could remember she had suffered from the complaint, and when young had been examined by a local doctor, who could detect nothing to account for the unpleasant odour. None of her family had ever had anything of the kind, but had always been strong and healthy. Except for the condition of her nose and throat, she had never suffered from any ailment. There were no evidences of a scrofulous diathesis, nor of any other dyscrasia. She had a well-marked nystagmus. There was no smell from the oral breath, but the nasal breath she described very correctly as “dreadful;” not that she was conscious of it herself, but all who came in contact with her made it sufficiently evidently that the ozæna *was* dreadful, and accordingly she always kept aloof from strangers. Between the age of fourteen and fifteen the menses appeared, and have since been regular. Their advent had no effect on the nasal trouble, and at the age of twenty-one she came to Dublin to see what could be done for her. Cold air, she stated, had no effect on her, but damp weather gave her great distress in the head, which would be quite “stupid.” There was always a great discharge from the nose, which in damp weather increased. She never derived any good from muffling herself up, but always felt the better of change of air and sea bathing. On examination the condition observed was the following:—The posterior wall of the pharynx was covered over with a thin greenish pellicle of dried mucus, which extended up into the naso-pharynx, in which region isolated pledgets of mucus were seen adhering to the membrane on the vault and posterior wall, both sides of the septum nasi, and round the openings of the Eustachian tubes. The rhinoscope, which after a little practice she tolerated remarkably well, afforded a good view of this region. It showed, too, that the nares were very roomy, and on one occasion I find, in the notes taken at the time, that the anterior nares were momentarily brought into view. The dried mucus was with difficulty brushed off with cotton wool fastened on to the end of a pharyngeal probe, and beneath it the mucous membrane was seen to be atrophied and raw looking. It became greatly injected after the efforts made to remove the mucus; but on resuming its usual condition, the membrane was seen to be thinned, secreting little, and presenting no abrasions or ulcerations.

Anteriorly the nose was well shaped, the nostrils larger than usual, but not broad or flattened. Internally each nostril exhibited a regular cavern, with dry shining walls, and adherent dry mucus, chiefly in



pledgets and crusts. The posterior wall of the naso-pharynx was clearly seen through the nostrils. When she articulated or swallowed, the levator palati muscle was perceptible in motion, the palate rising and falling, and the Eustachian tube opening and closing distinctly. The inferior turbinated bone formed a mere ridge on the outer wall. The middle one, though larger, was quite rudimentary, and the mucous membrane covering them had the same appearance and characters observed in other parts of the nasal cavity.

The indications for treatment in this case were—firstly, to remove the ozæna, and, secondly, to overcome the atrophy. In the latter object I was quite unsuccessful. For months she was under treatment, and every means I could devise were tried in succession in order to bring about a different condition of the mucous membrane, but I found none which was effectual, and no method which had more claim to be preferred than another; and this, I may say, has been the experience of all those who have endeavoured to combat this atrophy. For the ozæna itself I tried several disinfectants, but that which seemed most effectual was Condyl's ozonised sea-salt, as recommended by Lennox Browne. This was dissolved (a teaspoonful in a tumbler of warm water), and was used daily with Thudichum's douche—that is, it was allowed to flow into one nostril by means of a syphon, and to flow out of the other. As long as this was persevered in daily the fœtor disappeared, but if its use were discontinued even for a day the ozæna reappeared. I have seen her lately, and she tells me that she uses it now every morning as part of her toilet, and she suffers no inconvenience from its use. When I saw her the fœtor was almost imperceptible.

CASE II.—The second case is that of a medical student who consulted me a short time ago for his throat. He said he suffered from an uncomfortable feeling at the back of the throat and a constant trickling of mucus from the back of the nose. I examined the pharynx, and found it dry, glazed, and congested; it was coated with a thin layer of dry adherent mucus. The rhinoscope showed that this same condition extended up into the naso-pharynx. This made me examine at once the anterior nares, where I found the same configuration of parts as was observed in the previous case, the left side being more affected than the right. I interrogated him as to the presence of ozæna, and he told me he had suffered from it for the last ten years. He was himself unconscious of its presence, but he knew well of its existence from his friends, and it caused him so much annoyance that he usually kept at a distance. None of his family were similarly affected. He does not remember ever having suffered from rhinitis in any form. Though unable to recognise the fœtor in his own nose he is keenly alive to other smells, and finds the dissecting-room very offensive. Through both nares the posterior wall

of the naso-pharynx was clearly seen, as were also the various movements of the levator palati muscle, the soft palate, and the orifices of the Eustachian tubes.

CASE III.—The third case is not, properly speaking, a case of ozæna, as there is no fœtor; but as it presents some remarkable points in connexion with the subject before us I think it well to bring it forward, the most remarkable thing presented by the case being the total absence of fœtor. The case is that of a teacher, aged twenty-six, resident in County Wicklow, who sought advice at the Throat Hospital on March 27th, 1880. He complained of a dryness of the throat, which caused him such distress that he found it difficult to carry on his avocation. The pharynx was dry and glazed, the mucous membrane being atrophied and dry mucus adhering to its surface. The larynx presented signs of chronic laryngitis. The right naris was normal, but the left presented the conformation to which I wish particularly to draw attention:—A large and cavern-like nasal cavity, the turbinated bones undeveloped, the inferior a mere ridge; the back of the pharynx dry and shining, the Eustachian tube opening and closing, the soft palate rising and falling, the levator palati approaching the middle line as it contracted, and then falling back into position—all this was plainly visible through a speculum in the anterior naris. This condition caused him no trouble, but he occasionally suffers from frontal pain. He is continually blowing his nose, and finds it more difficult to clear the right than the left side.

This case, I think, is of importance, for it presents on one side of the nose all the characteristics on which Zaufal has laid such emphasis, and is almost an exact copy of the two first cases, and there is and never has been ozæna. The explanation seems to me to be, that the right nostril being normal the expiratory force was greater in the left than it would have been had the two nostrils been similarly affected; and, moreover, the frequent efforts he made to clear the nostrils prevented the mucus remaining sufficiently long to decompose and to cause fœtor.

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TREATMENT OF PROLAPSUS ANI BY HYPODERMIC INJECTIONS OF  
STRYCHNIA.

DR. LEONARD WEBER of New York reports (*N. Y. Med. Record*) some cases, from the record of which it would appear that the hypodermic injection of strychnia, *loco morbi*, in cases of simple prolapsus ani, has a direct and rapid effect upon the sphincter muscles, re-establishing the physiological tone after comparatively few injections. This mode of treatment is, he states, perfectly safe, and apt to effect a speedy and permanent cure.



## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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#### RECENT WORKS ON THE PRACTICE OF MEDICINE.

1. *Text-Book of Practical Medicine.* By Dr. FELIX VON NIEMEYER. Translated from the Eighth German Edition, by GEORGE H. HUMPHREYS, M.D., and CHARLES E. HACKLEY, M.D. Revised Edition. London: H. K. Lewis. 1880. 8vo. Vol. I. Pp. 767. Vol. II. Pp. 861.
2. *Cyclopædia of the Practice of Medicine.* Edited by Dr. H. VON ZIEMSEN. Vol. IX. 1880. Pp. 928.
3. *Elements of Practical Medicine.* By ALFRED H. CARTER, M.D., Lond., &c. London: H. K. Lewis. 1881. 8vo. Pp. 374.
4. *A Treatise on the Theory and Practice of Medicine.* By JOHN SYER BRISTOWE, M.D., Lond. Third Edition. London: Smith & Elder. 1880. Pp. 1,179.

1. FOR the reader who is familiar with the terse yet fascinating style and the powers of graphic description of the lamented Professor of the University of Tübingen, a new edition of the "Text-Book of Practical Medicine" possesses an interest which is begotten of old associations. And yet to such an one the perusal of the present revised edition will probably bring something like a feeling of disappointment, for in many respects the Text-Book is no longer Niemeyer's. In the first place this, the edition of 1880, is based on a posthumous German edition, of which Dr. Eugene Seitz was the editor or, more correctly speaking, the author. So extensive were the changes in the text introduced by Dr. Seitz that the translators of the present edition wisely elected to adhere as closely as possible to Niemeyer's original rather than to make a servile and literal translation of Dr. Seitz's edition. In the second place the individuality of the work has been endangered by the addition of short articles upon such subjects as Chronic Poisoning by Alcohol and Morphia, Wandering Spleen, Paralysis Agitans, Scleroderma, Elephantiasis Græcorum, and Progressive Pernicious

**Anæmia.** We do not for a moment deny the usefulness of these articles, but what we protest against is their insertion into Niemeyer's *Practice of Medicine*. A chapter upon "Yellow Fever," compiled chiefly from Bartlett's "Fever of the United States," edited by Alonzo Clarke, has also been added. The description given of this dreadful pestilence is as follows:—

"The cause of the disease is not certainly known, but it is supposed to be in the nature of germs. The affection is not contagious—*i.e.*, a patient having it, if stripped of his clothing and disinfected, may be placed among other patients without spreading the disease. So, the germs do not develop and multiply in the patient, but they do so in articles about him (fomites); germs may be carried in clothes and other articles, or in ships, especially in the bilge-water. These germs are deprived of activity by a freezing temperature, but may be awakened by a heat of 90° Fahr.; they are destroyed at 250° Fahr.

"It has been maintained that yellow fever is only a variety of malarial fever, but the evidence seems to be very strongly against this view.

"The National Board of Health (United States, 1879) reaches conclusions about as follows:—

"The essential cause of yellow fever is a 'germ' which is capable of growth and propagation outside of the human body, and which flourishes especially in decaying organic matter. Disinfection must attack the germ and that on which it grows. Disinfection is a poor substitute for cleanliness; it is best done by sulphate of iron, carbolic acid, fresh quicklime, fresh charcoal-powder, chlorides of zinc and aluminum, and permanganate of potash. The disinfectant must be brought into actual contact with the germ; when the germ is dry, it must be moistened or else subjected to a dry heat of 250° Fahr. While the infected articles are dry, move them as little as possible; moisten them with boiling water or some disinfectant solution. The Board advises moist cleansing, followed by fumes of sulphur, using about 18 ounces of sulphur to 1,000 cubic feet of the space to be disinfected. The removal of an unpleasant odour is no proof of disinfection. Textile fabrics which have been exposed to yellow-fever infection should be placed in boiling water or in an oven; rooms and houses which have been occupied by yellow-fever patients should be disinfected as soon as possible. Lastly, they suggest that 'every suspicious case of sickness should be at once isolated, and every possible precaution taken to prevent infection, by providing attendants who have had the disease, and thorough disinfection of all discharges from the sick. If the disease proves to be yellow fever, all articles of clothing and bedding used about the sick should be burned, the house should be vacated, and every room tightly closed and fumigated with burning sulphur.'



"Yellow fever only occurs when the temperature is high; in the northern part of the United States most of the epidemics have begun in July and August. A frost suddenly checks the spread of the disease.

"Susceptibility to this affection is greatly influenced by race and acclimation; in many epidemics negroes escape; acclimation may cause some change in the tissues that impedes absorption of the germs. It is said that acclimated persons are not troubled by mosquitoes, which are usually very plentiful in yellow-fever regions.

"ANATOMICAL APPEARANCES.—Rigor mortis is early and decided. The skin is more or less jaundiced. The heart is often pale and relaxed; its muscles may have undergone fatty degeneration. The greatest changes are seen in the abdomen; there is acute catarrh of the mucous membrane of the alimentary canal; rarely there may be ulcers in the stomach, and there is usually more or less dark blood (black vomit is blood mixed with the fluids of the stomach). The liver is but little changed in size, but is of uneven yellow colour (more marked in the left lobe), and its cells are filled with fat; it looks like the fatty liver of drunkards. The spleen is not especially changed. The cortical substance of the kidneys is often swollen, and there are signs of inflammation in all parts of them.

"SYMPTOMS AND COURSE.—The period of incubation is not settled, but probably is from a few hours to three days. The first symptoms are chilliness alternating with fever, or perhaps a severe chill, great restlessness, red face and eyes, headache ('the most characteristic symptom of the disease is *the peculiar pain in the forehead and eyeballs, with the drunken appearance of the eye*'), pain in the joints, fever (102° Fahr. or more), frequent respiration, and frequent pulse. Severe cases sometimes have a cadaveric odour early in the disease. The tongue is coated and swollen, the pharynx reddened; the gums swell and bleed readily. The epigastrium is very sensitive, and there is usually vomiting. The kidneys are affected, and albuminuria is common; it is said that if the albumen disappears gradually it is a favourable sign, while its continuance or increase is ominous. The symptoms increase till the second or third day, the temperature rising to about 105°. Then there may be jaundice of the skin and conjunctiva; the urine contains bile; the fæces retain their colour, showing that the jaundice is hæmatogenous. There is frequent hæmorrhage from the nose, or more rarely from the stomach; the latter is of evil import.

"After increasing in severity for about two or three days, the symptoms subside; the temperature may fall to normal in twelve hours, but does not usually go below 100°; the patient may feel so much better as to think he is well; but the nausea and sensitiveness of the epigastrium remain. This stage of remission may last one or two days, or it may be the commencement of convalescence. In the third stage the

symptoms again grow worse, the temperature rising to  $104^{\circ}$ ; the patient is usually apathetic, though he may completely retain consciousness. Now come the jaundice and hæmorrhages from the alimentary canal; that from the stomach constitutes the 'black vomit' which has given one name to the disease. While this 'vomit is thick and pasty, being raised in small quantities, and thrown up mixed with natural mucus, the physician does not despair of his patient. The thin black fluid with the coffee-ground sediment is always, in Mobile, a fatal symptom.' If the disease continues, the kidney trouble may grow worse, and entire suppression of urine occur. If this third stage is severe it mostly terminates in death ('from syncope, uræmia, apoplexy, or asphyxia'); but sometimes the temperature falls suddenly, the patient sweats freely, and the severe symptoms all subside. Convalescence is slow, and for a long time the stomach remains weak. In severe cases the strength of the patient may not be 'reëstablished sooner than from *ten to twenty days after the cessation of the febrile symptoms.*' 'The average duration of fatal cases is less than a week.'

"THE TREATMENT of yellow fever, as of other epidemic diseases, has varied greatly with different epidemics. Bleeding, salivation, purging, sweating, &c., have each had their advocates; but at present the most favoured plans may be considered—first, that of administering at the start a large dose (gr. xx. each) of calomel and quinine, followed after a few hours by a purge, and subsequently to treat symptoms; and, secondly, the treatment by laxatives, such as cream-of-tartar and tamarind-water, followed by tonics, and, if the disease goes on, by active stimulants. It is considered very desirable to keep the patients well covered in bed, and in moderate perspiration; the latter may be aided by hot foot-baths under the bed-clothes and by warm aromatic teas. Possibly frequent small doses of jaborandi or its active principle, pilocarpin, might prove beneficial."

It will be noticed how lamentably deficient the foregoing account of yellow fever is in that explanatory commentary, if we may so call it, which Niemeyer was wont to work into his graphic delineation of disease. We owe a debt of gratitude to the translators for having as far as possible kept this and similar additions distinct from the original text by having enclosed them in brackets or placed them at the end of their respective sections. In this way the work of Niemeyer is kept distinct from that of his editor, Prof. Seitz, and of his translators.

2. This volume completes this great Cyclopædia of Medicine—the largest undertaking, by far, both as to the editorial labour and the amount of capital involved, of any medical publication in the

English language. The first volume was issued in 1875, and since then a volume has appeared every three months. The work, as finished, consists of seventeen volumes, large octavo, of from 700 to 1,000 pages each.

At the earnest request of many subscribers, an index volume to the complete work is now being prepared, and will be published shortly at the probable price of one guinea.

The volume on "Skin Diseases," which will in Germany form a part of Ziemssen's *Cyclopædia*, has not yet appeared in that country, yet the publishers of the English edition announce that, when it is ready, they will at once have it translated, and publish it here as an independent volume, and, further, will present a copy to every subscriber to Ziemssen's *Cyclopædia* who has completed his set by that time.

This *Cyclopædia*, which is the greatest medical work of the age, reflects the highest credit on the publishers, Sampson, Low, & Co.

3. In his preface Dr. Carter tells us that his "volume in no way pretends to compete with the valuable standard works of Aitken, Bristowe, Niemeyer, Roberts, and others." His object has been "partly to provide the student with a general introduction to the study of medicine, and partly to bring the essentials of the subject—so far as required for the ordinary medical qualifications—within the grasp of those who are not disposed or have not the leisure to read the large and complete works referred to—a class of readers which, in my opinion, usually meets with too little sympathy." There is no doubt that medical students especially meet with but little sympathy, for some of the text-books are far too difficult for beginners. We remember what a boon "Huxley's *Physiology*" proved to ourselves in enabling us to grasp the "first principles" before attacking "Kirkes." And there are very few who have not wished for an easy introduction to the practice of medicine—an introduction which would contain all the important facts, and in which an undue share of attention on the part of the author would not be given to one part of the subject to the detriment of the rest. While we object to "epitomes" and "outlines," which are synonymous with "crams," and which are generally used for "cramming" purposes, we think that such introductions as the present may serve a useful purpose. The author does not presuppose a great amount of knowledge on the part of his reader, so much so that a "first-year's man" can have no difficulty in mastering

the pages of this book. In no sense, however, can the work be regarded as a general introduction to the study of medicine. Only the first twenty pages claim to teach the pathological processes which constitute morbid states, and the principles by which departure from healthy function is to be recognised and estimated. The twentieth page begins with typhus fever, and from this to the end there is a little epitome of every disease—in fact, the volume is a small cram-book, in which every malady has its diagnosis, prognosis, treatment, &c., given in paragraphs of a few lines each.

We may select one or two passages from the book which will enable the reader to judge of its general style. Thus, taking Pleurisy, p. 135, we read under the head of Morbid Anatomy:—

“The membrane is first congested, and soon loses its usual polish by shedding its endothelium. Next a layer of coagulable lymph, enclosing innumerable cells, is thrown out on the surface, and a variable quantity of sero-fibrinous fluid accumulates within the pleural cavity. In favourable cases the fluid is, after a while, reabsorbed, the pleural surfaces come once more into contact with each other, and the exudation of lymph more or less completely disappears, what remains becoming organised into fibrous tissue, causing adhesions and agglutinations. In other cases the fluid undergoes purulent transformation (*empyema*), or it persists,” &c.

Or if we turn from a commonly occurring to a less common disease, such as Leucocythæmia, we read, p. 85:—

“To appreciate the nature of this affection it is necessary to bear in mind two facts—(1) that the lymphatic tissues include not only the lymphatic glandular system and the spleen, but also the solitary and agminated glands of the intestine, the malpighian bodies of the spleen, and the delicate adenoid tissue found in submucous and subserous tissue around the bronchial tubes, hepatic ducts, and elsewhere; and (2) that the cell elements of the blood take their origin in these lymphatic tissues.”

The various kinds of leucocythæmia and their treatment are then discussed in the same terse manner.

Or we may select the treatment of Croup, p. 99:—

“In *children*, whether it be true or pseudo-croup, the treatment is similar. *Begin it as early as possible*; give a warm bath immediately, to which mustard (ʒss. to the gallon) may be added, dry quickly, and put to bed in flannel. If the breathing be very difficult (especially if respiration be impeded), some rapidly acting emetic may be given. (Alum, ʒi. in honey, every 10 or 15 minutes, has been strongly recommended,



or sulphate of zinc.) Hot sponges should be constantly applied to the throat," and so on.

Again, p. 119, under the head of Interstitial Pneumonia, we read:—

*“Physical Signs.—*(1) Retraction of the affected side, with deficient movement; (2) tubular or wooden dulness on percussion; (3) the breath-sounds are weak, bronchial or cavernous; (4) moist sounds of various kinds, often of a metallic quality; (5) increased vocal fremitus; (6) bronchophonic or pectoriloquous vocal resonance; and (7) frequent displacement of the heart’s apex towards the affected side. The right heart is sometimes dilated.”

These extracts may suffice to show that the book is intended to give the student just enough to enable him to grasp the most important points of the pathology, diagnosis, and treatment of each disease; and this sketch affords a foundation on which he may afterwards build up his knowledge from a more elaborate treatise.

We believe that the simple, terse, and lucid style of the author will be appreciated by students and junior practitioners of medicine.

There are a few unimportant typographical errors which have escaped the author, as they are not included in the list of errata. The correction of these, and the addition of an index, will materially add to the value of the book.

4. Truly no one can complain of a want of works on Practice of Medicine with such volumes as Watson, Niemeyer, Roberts, Aitken, and Bristowe to choose from, not to mention Ziemssen’s “Cyclopædia.”

Bristowe is a bulky tome of over eleven hundred pages, and might with advantage have been divided into two volumes. The third edition differs from its immediate predecessors chiefly in the incorporation in it of brief notices of Hæmophilia and Tetany, and of an article of some length on Madness, and in the addition to it of about fifty woodcuts, mostly from original drawings. The division of the work—nearly 300 pages—on Diseases of the Nervous System seems to be the best part of the book. In this is found the following description of the “patellar tendon reflex,” the pathological relations of which were first investigated by Westphal and Erb:—“This is the sudden contraction of the quadriceps extensor femoris and jerking forwards of the foot, which may generally be caused

in health by striking sharply the patellar tendon when the leg is allowed to hang pendulous either over the edge of a bed or chair, or by crossing the one limb over its fellow. In order to elicit the phenomenon the limb should be allowed to hang loosely, and the patient should be taken unawares; for it may often be counteracted by voluntary effort or expectant rigidity of muscles. In cases in which the reflex is feeble it is necessary to strike the patellar tendon sharply with some heavy instrument, such as a percussion hammer; but in cases in which it is aggravated or even well marked a mere fillip with the finger-nail is often sufficient to excite it; and it may often then be developed by striking the patella itself, the fibres of the muscle above the patella, or even the periosteum of the tibia. In such cases, moreover, the striking of one patellar tendon may cause the reflex in both legs. Another phenomenon of the same class is that known as the 'ankle clonus.' This is a tremulous movement of the muscles of the leg, the vibrations of which, according to Dr. Gowers, are always at the rate of from five to seven in the second, which can be excited only in paralysed muscles by forcible flexion of the ankle-joint. It lasts as long as the flexion lasts and ceases when it ceases. Occasionally it extends from the muscles of the leg to those of the thigh, and even to the opposite extremity. In cases in which the phenomenon is present the same tremulous movements are excited when, in attempting to walk, the patient presses his weight on the toes. It is apparently of the same nature also as the phenomenon which, when arising under other circumstances, is sometimes termed spinal epilepsy. When the foot is forcibly flexed in the cases under consideration, a sharp tap with the finger on the muscles on the front of the leg or on the peronei causes sudden contraction of the struck muscles. The patellar reflex and ankle clonus are usually absent in *tabes dorsalis*, but as a general rule ordinary reflex phenomena persist. The ankle clonus is never present excepting in paralytic cases."

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*Spermatorrhœa: its Causes, Symptoms, Results, and Treatment.*

By ROBERTS BARTHOLOW, A.M., M.D. 4th Edition, revised.

New York: William Wood & Co. Medium 8vo. Pp. 128.

THE subject of *Spermatorrhœa*, and still more of the causes leading to it, is not pleasant either to consider or discuss; and accordingly we find, that since the appearance of M. Lallemand's work, it has hardly received the attention which its importance requires. So

much has this been the case, that many members of the profession have endeavoured to almost ignore it altogether; and so it is that this field of practice has been to a great extent occupied by a set of unprincipled charlatans, distributing in *terrorem* little volumes which are a disgrace to public decency, and thriving upon the fancies and fears of their victims. The practical physician, however, has long recognised the existence of this very seamy side of poor human nature, but at the same time appreciated the want of a reliable physiological and pathological monograph on the subject; and it is with pleasure, therefore, that we see an author of Dr. Roberts Bartholow's reputation boldly lifting the veil and discussing this unpleasant topic thoroughly, but at the same time with all possible delicacy, and in a treatise which has stood the crucial test of four successive editions. We all remember Lallemand's idea, that seminal weakness was caused by want of tonicity of the urethral tubules of the vesiculæ seminales; and we have often ourselves cauterised these tubules with strong solution of nitrate of silver, or with the actual caustic, to the great pain of our patients, and occasionally with results which gave us some anxiety. Dr. Bartholow rejects this mechanical theory altogether, and proves that the enfeebled state of the male generative organs in which, on slight excitement, an imperfect erection is attended with a slight emission, is a neurosis dependent upon the generative nervous centre becoming morbidly sensitive to reflex action upon insufficient excitation. Further, he shows that the debility immediately following upon self-abuse—a debility which food or even stimulants do not remove—is not due to the mere seminal loss, but to the undue expenditure of nervous force; “for under no other circumstances is so small a discharge from the body accompanied by such serious results” (p. 25). We have no doubt that the maxim of the Chian sage, “Omne animal post coitum triste,” is a simple expression of the same physiological truth.

Dr. Bartholow's chapters on the treatment of seminal weakness are interesting. With reference to the *porte-caustique* he is not so much in its favour as Acton, or against it as Thompson, but pursues a middle course, limiting its use to cases where there is chronic inflammation, or in which the moral effect of the remedy is desirable. On the whole, however, he rather leans to the injection into the urethra of a solution of nitrate of silver (gr. x. in oz.), or some similar astringent medium. He has obtained admirable results from stretching the sphincter ani (p. 95) with a

two-bladed speculum, but does not undertake to explain the *methodus medendi*, or to indicate the class of cases for which this plan is suitable. He also mentions Trousseau's proposal to place in the rectum a perforated wooden plug to press on the prostate gland and the vesiculæ seminales. The author makes some most judicious remarks on the causes of generative weakness—a subject which has already been well discussed by Churchill—and wisely trusts very much to moral and general tonic remedies.

We commend this little book to our readers as an excellent contribution to a subject which the author has evidently by no means exhausted; and, speaking on a minor matter, may remark upon the great elegance of the typography and general make-up of the volume, which shows what formidable rivals transatlantic publishers will become should the proposed international publication system be adopted by Great Britain and the United States.

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*A Guide to Therapeutics.* By ROBERT FARQUHARSON, M.P.; M.D., Edin.; F.R.C.P., Lond. Second Edition. London: Smith, Elder, and Co. 1881. Pp. 376.

HAVING in a notice of the first edition of this useful compilation referred fully to its distinctive features (*Dublin Journal of Medical Science*, Sept., 1878), it is unnecessary again to indicate them at length. It may, however, be mentioned, that Dr. Farquharson's very praiseworthy object in it is, to connect as far as possible the therapeutical actions and uses of drugs with their known physiological effects. For this purpose the page is arranged in two columns, in a diagrammatic form; and thus, following a definite plan in every instance, the physiological action of each drug is balanced as it were against its therapeutical action. Such a method is to be commended as a rational and scientific system of teaching therapeutics, the adoption of which has already done much towards raising an important branch of medical science from the domain of scepticism and empiricism. The omission in the *Guide* of all botanical and pharmaceutical details is judicious, and will help the student in remembering the fundamental points to be kept in view in the treatment of disease.

Dr. Farquharson, notwithstanding his Parliamentary duties, has succeeded in bringing up his second edition to a level with recent knowledge. Many points have been borrowed from the American editions of the work, and a good *résumé* is given of the principal



new non-official preparations. We have again to notice some inaccuracies and several misprints. Of the latter we have noted no less than seventeen. The statement in the first edition, that black wash was "*calomel dissolved in lime water*" is not rectified by the substitution of the word "*suspended*" (p. 105), inasmuch as the chemical change resulting from the mixture of the ingredients of the wash is in both cases ignored. The inexact statements, that apomorphia is one of the alkaloids contained in opium, and that cherry laurel leaves contain prussic acid, are repeated; but, from what has been previously stated, it will be apparent that the book is altogether a good and useful one.

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*On Aneurism, especially of the Thorax and Root of the Neck.* By RICHARD BARWELL, F.R.C.S., Surgeon to Charing Cross Hospital. London: Macmillan & Co. Pp. 118.

THE subject of aneurism is one always interesting to the surgeon and the physician. Under it are included some of the most difficult problems of treatment; and most men are anxious to aid, if they can, in the elucidation of these questions. It is no mere vanity to say that Dublin surgeons have helped on the work, as a body, at least as much as any others; indeed it is simple fact that with their patient persistence, by a process of the purest "*bloodless surgery*"—compression—they have cured large numbers of cases which would otherwise have been subjected to the doubtful remedy of the knife. Mr. Barwell has had some experience too, and he takes care to impress upon the reader that it has been large; but when he cries out, as he does, against "*British work*" being attributed to "*foreign names*," we cannot help observing that Mr. Barwell is himself a sinner on much the same lines, ignoring Scotch and Irish labourers, and implying that for the Truth it is to London, and especially to Charing Cross Hospital, we must turn our eyes.

While we say this, however, we must add that, albeit the story is often very obscurely, almost unintelligibly told, Mr. Barwell has something to say which is worth hearing. Aneurisms of the aorta, and of the vessels at the root of the neck, are unpromising in treatment, and it is to these that Mr. Barwell chiefly devotes his attention. He attributes much to the safety which aseptic surgery affords, and also to the use of a peculiar flat ligature which he has devised. Having come to the conclusion that with modern dressings it was no longer necessary to cut through the internal and middle coats

of the artery, as advocated by Jones in 1805, he used catgut, applying it with just such pressure as stopped short of dividing the tissues. But catgut being at times too soluble, or fragile, or septic, he sought for some material which, being flat or tape-like, could be firmly tied round an artery, and yet leave it uninjured and hæmorrhage-proof, and which, at the same time, would not dissolve too quickly, and would bear a secure and reliable knot. The material selected was the aorta of an ox, and this was placed in a 3 per cent. solution of carbolic acid. "To make out of the vessel a ligature, it is only necessary to peel away the outer cellular coat, and then, with a pair of scissors, skilfully to cut the middle and inner coats spirally round and round, taking care to keep the breadth equable. The long ribbon, as thus obtained, is, however, far too elastic to be securely tied; the knot rapidly loosens itself. The redundant elasticity is to be eliminated by suspending the cord, and by hanging to it a weight of from two to four pounds, according to its thickness. Thus treated, the ribbon dries in about six hours into a horny or vellum substance; any previously-neglected irregularities may be scraped off with a sharp penknife, then the cord may be stored in antiseptic gauze until wanted. About 15 or 20 minutes before the operator is ready to pass the needle, a sufficient piece of the material is to be soaked in a 3 per cent. solution of carbolic acid, when it will become quite soft and easy to tie."

Mr. Barwell has had several cases of aneurism at the root of the neck, and has been successful in his treatment, as far as success is attainable in this affection. In innominate aneurism he has practised the method first recommended by Wardrop—of tying the carotid and the third stage of the subclavian. Under this head he records "cures" three times, and it is remarkable that in the four other cases operated upon with ordinary ligatures by various surgeons, "no benefit" followed. A number of cases are excluded, because they were not innominate aneurisms; but seeing that a pure innominate aneurism is a rarity in surgery, we are inclined to wonder at the coincidence of circumstances that directed three examples of the disease into Mr. Barwell's hands. "The still more singular good fortune," he writes, "which causes my name to be written against the only three successful cases, is in great measure due, I believe, to the views I entertain about non-division of the arterial coats, for though these vessels were all tied with catgut, yet none of their coats were, I am positive, divided." We

question this assumption. The risk to life really depends upon the simultaneous ligature of the two large vessels, and the subsequent risks, and is not affected appreciably by the form of aneurism thus treated. There are many cases recorded of successful ligature of these vessels for aneurism, in which recovery took place, although all materials—hemp, silk, and catgut—were used. We may mention the cases of Mr. Palmer of Armagh, of Dr. Hobart of Cork, of Mr. Heath of London, and of Dr. Stimson of Philadelphia. It is true that some of these were admittedly aortic cases, but that does not affect the question of the method of tying, or the quality of ligature used. Indeed, seeing that innominate aneurism, strictly speaking, is so hard to diagnose, and is undoubtedly so seldom met with, we take leave to doubt that all Mr. Barwell's cases are of that nature, until there are some *post mortem* evidences.

The chapters on the different forms of aneurism at the root of the neck are of very much interest, and there are many points of diagnosis which are well put, and which it will be found useful to test. Although we are not prepared to accept all that Mr. Barwell says about his special method, we think he has done a good deal to bring this subject more prominently forward. We believe that there are many cases of aneurismal disease of the large vessels in the region referred to that might be benefited by rational surgical treatment such as he advocates. The physician's power too often begins in the diagnosis and ends in making the descent to the inevitable as smooth and pleasant as possible. Undoubtedly many cases so pass away which might be wisely transferred to the surgeon's hands.

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*Statement of the Income and Expenditure of the Londonderry City and County Infirmary, and other Particulars, for 1880.* Londonderry: Printed at *The Sentinel* Office, Pump-street. Pp. 14.

SIR WILLIAM MILLER, Knt., M.D., in his report of the medical and surgical cases which have been under treatment during the year 1880, states that 813 patients were treated in the hospital, of whom 742 were sent home cured or relieved by treatment, 30 died, and 41 remained under treatment on 1st January, 1881. There were also 430 cases of accident treated as external patients, their injuries comprising dislocations, fractures, wounds, and contusions, not requiring to be detained in hospital. A large number of operations were performed during the year, with, in most instances,

successful results. The general mortality was a little over  $3\frac{1}{2}$  per cent.

In the City Fever Hospital 57 cases were under treatment, of whom 46 were cured, 6 died, and 5 remained under treatment on 1st January, 1881.

We notice with pleasure that the demand for nurses carefully trained in the Infirmary has been fully sustained, and that most satisfactory accounts of the conduct of the nurses have been received from patients' friends and the physicians or surgeons in attendance.

*Experimental Researches on the Temperature of the Head.* By J. S. LOMBARD, M.D. London: H. K. Lewis. 1881. 8vo.

THIS volume contains three papers. The first is, "On some points relating to the Normal Temperature of the Head." The writer's previous researches did not agree with the results of M. Broca, Dr. Gray, and MM. Maragliano and Seppilli, who found that the temperature of the left side of the head was uniformly higher than that of the right side. In the present paper Dr. Lombard gives the result of 6,000 observations made on three individuals whose mental and physical conditions were well known, and with a careful supervision of all external circumstances. The purpose of these observations was to discover whether the absolute temperature of the head had any effect on the difference or equality of temperature of corresponding points on the two sides. The part of the head examined lay above the zygomatic arch and behind the external angular process of the frontal bone. It covered the frontal station of M. Broca. For the exact method followed and the details of the experiments we must refer to the paper, where the results are given in tabular form. As a general conclusion the author finds "that the degree of absolute temperature has no definite influence on the frequency of occurrence of superiority of temperature on either side of the head, and but a limited influence, at best, on equality of temperature of the two sides; at every absolute level each of the three conditions may be found with varying frequency at different times." In observations of the temperature of the head in disease, if reliable results are to be obtained, much greater latitude must be given to normal variations of temperature, both absolute and relative, than has hitherto been done.

The second paper is "On the effect of Voluntary Muscular



Contractions on the Temperature of the Head." It gives the results of experiments made to test the conclusion of Dr. Amidon of New York, who found a rise of temperature of certain parts of the head when violent muscular contractions on the opposite side of the body were made. The seat of elevation of temperature was different according to the group of muscles contracted, and was supposed to correspond to the cortical centre of this muscular group, and by this correspondence a new method of study of cerebral cortical localisation was supposed to be inaugurated. As was to be expected, the careful experiments of Dr. Lombard, who was assisted by Dr. F. H. Haynes, show that there is no such correspondence, as that stated by Dr. Amidon, the temperature rising, or falling, or remaining stationary, without order. At most it was found that muscular movements caused in some unexplained way a disturbance in the temperature of the head, the variations being greater than those observed commonly in the quiescent condition of the individual.

The third paper is "On the Influence of the Temperature of the Air on the Temperature of the Head." It was found that there was a general relation between the average temperature of the air and that of the head, both falling together; but the fall in the head was very slight as compared with that in the air, the maximum of the former being only  $1.6^{\circ}\text{C}$ ., while the latter, at its greatest, was  $11.9^{\circ}\text{C}$ . The author thinks it possible that *season*, independently of simple absolute temperature, may have an influence on the results. Something of this kind has been found for the temperature of the hand by M. Louis Couty. The experiments require to be extended in this direction.

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*Illustrations of Clinical Surgery.* By JONATHAN HUTCHINSON, F.R.C.S. London: J. & A. Churchill, New Burlington-street.

It is now five years since Mr. Hutchinson began the publication of his "Illustrations of Clinical Surgery." The first volume, full of valuable additions to our literature, was followed by a period of about two years, during which no fasciculus was published, owing to the difficulty of producing the plates in time for the dates of issue. That difficulty has now been overcome, and we are assured that the second volume will be brought out without interruption.

The fasciculus now published contains four highly-finished plates—viz., "Exfoliation of the Skull after Injuries," "A peculiar

form of Inherited Gout," "Cancer of the Tongue and Smoker's Glossitis," and "Blood-clot between Dura Mater and Bone." As artistic productions, we need only say that they are as highly finished and as true as any of their predecessors.

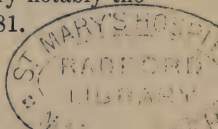
Mr. Hutchinson describes a form of inherited gout which he calls "Last Joint Arthritis." In the cases which he has seen the arthritis is persistent, not paroxysmal; is attended with but little pain, remains for years, and then subsides. All the fingers were affected, but the disease fell with greatest severity on the terminal joints. The swollen parts were the seat of a dusky congestion, which was increased by exposure to cold. "If such an expression is permissible, it is a sort of articular chilblain modified by gout."

The observations on cancer of the tongue and excision of that organ are very interesting. Mr. Hutchinson is in favour of operation, and those who think with him will read with pleasure these words:—

"If earlier operations were oftener resorted to, I feel sure that the reputation of excision, as a permanent cure for cancer of the tongue, would be much advanced. I have at present four patients living, and quite well, at periods of three years or more after the operation, in whom the microscope left not the slightest doubt that the disease was cancer."

#### BROMIDE OF ETHYL IN EPILEPSY AND HYSTERIA.

MM. BOURNEVILLE and D'Olier from their researches on the physiological and therapeutical action of this anæsthetic draw the following conclusions:—1. The dilatation of the pupil which occurs at the commencement of the inhalation of the bromide of ethyl is not constant. 2. Complete muscular relaxation is exceptional. 3. Anæsthesia is produced in very variable degrees according to the subjects. 4. The temperature, the secretions, and the general condition undergo no modification. 5. The pulse and the respiration are slightly accelerated. 6. A trembling of the limbs, more or less marked, may be produced during the inhalation, but does not last after it. 7. Hysterical attacks are in general easily arrested by bromide of ethyl. 8. Epileptic attacks may sometimes be kept in check by giving the drug during the tonic period. Most frequently the inhalation produces no effect. 9. In epilepsy the regular employment of the bromide of ethyl, administered in daily inhalations during a period of from one to two months, diminishes very notably the frequency of the attack.—*Gaz. Med. de Paris*, 26 Mars, 1881.



## PART III.

### HALF-YEARLY REPORTS.

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#### REPORT ON MATERIA MEDICA AND THERAPEUTICS.<sup>a</sup>

By WALTER G. SMITH, M.D., Dublin; Vice-President K.Q.C.P.I.;  
Physician and Pathologist to the Adelaide Hospital; University  
Examiner in Therapeutics, T.C.D.

ART. 2. Calomel, stability of.

- „ 1. Gutta-percha.
- „ 3. Iodoform.
- „ 4. Resorcin.
- „ 5. Pilocarpin.

1. *Gutta-percha*.—From a surgical point of view gutta-percha presents the inconvenience of yielding brittle apparatuses, and, in warm climates, it becomes so brittle after a few months that surgeons are unable to use it. M. Fleury finds that by making a mixture of 9 parts gutta-percha with 1 part camphor a product is obtained which is very soft and coheres perfectly at a temperature of 58° C. When cool it remains coherent and elastic.—(*Répert. de Pharm.*, from *Lyon Médical*.)

2. *Calomel, stability of*.—Mr. Hoglan has reinvestigated this important question which has already received considerable attention. M. Verne states that calomel mixed with sugar, chloride of sodium, or citric acid, does not undergo any modification, and scouts as pure prejudice the supposed danger of taking acid drinks at the same time as calomel. He concludes from his experiments that calomel is a more stable compound than is generally supposed, and that chloride of sodium, at 40° C., has no action upon it. These conclusions are contradicted by other persons who have also studied the same subject, while they have been confirmed by some

<sup>a</sup> The author of this Report, desirous that no contribution to the subjects of *Materia Medica* and *Therapeutics* should remain unnoticed, will be glad to receive any publications which treat of them. If sent to the correspondents of the Journal they will be forwarded.

observers; and, with a view to settle the question, Mr. Hoglan undertook a series of experiments. From these it appears that calomel, at the temperature of the human body, is slowly converted by the action of water into corrosive sublimate, and that, consequently, its molecule is not stable at this temperature. His experiments also prove that chloride of sodium, sal ammoniac, citric acid, and hydrochloric acid favour this transformation, and, therefore, these substances are more or less dangerous when they meet with calomel in the animal economy. The contradictory results which have been obtained upon this subject may probably be explained by the different temperatures at which the experiments have been conducted. The question of the transformation of calomel into corrosive sublimate by sugar, magnesia, bicarbonate of sodium, and carbonate of magnesium, was also studied by Mr. Hoglan.

(a.) Calomel and sugar were triturated together, and at the end of twenty-four hours, and even after a fortnight's contact, no trace of corrosive sublimate could be detected.

(b.) Calomel and magnesia, treated in a similar way, yielded evidence of corrosive sublimate at the end of twenty-four hours.

(c.) Calomel mixed with magnesium carbonate or sodium bicarbonate gave a result similar to that of the preceding experiment.

Mr. Hoglan's experiments seem then to prove: that M. Verne's experiments are not exact on all points; that the temperature exercises great influence over the stability of calomel; that the observation of M. Berthe relative to the transformation of calomel into corrosive sublimate at a high temperature is correct; and, lastly, they support the opinion of M. Mialhe—that alkaline chlorides augment the activity of calomel.—(*Répert. de Pharm.*, Janv., 1881, from *Amer. Journ. of Pharm.*)

[In the Report for March, 1879, some account was given of Herr Slop's experiments, the results of which are in accord with those of Mr. Hoglan.]

3. *Iodoform*—(a.) *uses of*.—Dr. H. C. Howard contributes the following to the *Chicago Medical Review*:—"The value of iodoform as a topical application has been before the profession for a considerable time, but I am convinced that it is not even yet appreciated by the majority, who have a rather indefinite idea that it is useful, and a very imperfect notion of the extent and scope of its usefulness. My own experience with this agent has been so satisfactory that I have come gradually to look upon it as the very best



at our command for the healing of ulcerated, eroded, granulated, and abraded surfaces, which have for any reason too little inclination to take on healthy action, and which therefore require some alterative or stimulative impetus. I shall therefore designate in a few words some of the conditions in which I have found it useful.

“*Chancre and Chancroid*.—Take iodoform one hundred parts, sugar of milk two hundred parts, thymol one part. Let the above be thoroughly mixed and reduced to an impalpable powder. The glans and prepuce must be thoroughly clean and dry. Then pack the ulcerated surfaces full of this powder, dust it over the surrounding parts, and secure it with a light bandage. Repeat the application as often as the parts become moist from new discharges. Ordinarily, about three applications will be required every day for the first two or three days, then as healing continues they may be repeated less frequently. A fair trial of this method I am certain will convince anyone of its superiority.

“*Herpes Circinatus, Herpes Zoster, and Herpes of the Prepuce*.—Dissolve one dram of iodoform in one half ounce of the oil of eucalyptus, and paint the diseased surface with this solution. Two or three applications will usually effect a cure.

“*Granulated Lids*.—Apply iodoform and sugar of milk, one part to five parts, directly to the everted lids with a soft brush. This occasions no smarting or pain, and often cures cases of months’ standing in two or three weeks. The thymol should not be used in these cases, as it irritates and produces pain.

“*Granular Pharyngitis*.—The same powder as indicated for chancre and chancroid may here be employed with an insufflator, thoroughly, at bedtime. The most obstinate cases will often yield promptly to this course.

“*Chronic Ulcers of the Leg, Cracked Nipples, and all kinds of Indolent Ulcers with Raised Edges*.—Prepare an ointment containing one half dram of iodoform in an ounce of cosmoline, and apply frequently after having previously thoroughly cleansed the parts. The well-known and popular addition of the balsam Peru to this ointment masks the odour and adds to its value. I would add that the above is an auxiliary, not a substitute, for the ordinary methods of applying pressure, such as strapping and bandaging, which should not be omitted.

“*Uterine Catarrh*.—For uterine catarrh, or, as it is improperly called, endometritis—I refer to those cases in which there is congestion, and a consequent discharge, with some enlargement, and

an erosion extending up into the canal—I employ a suppository, which is made and applied in the following manner:—Mix one half dram of finely-powdered iodoform with one ounce of the butter of cocoa. This may be kept in a shallow ointment-jar. I have a thin silver tube about one-fifth inch in diameter, with a closely-fitting piston. This tube is about eight inches long. When a suppository is needed I retract the plunger or piston to a point from the distal extremity of the tube corresponding to the length of the required suppository. Then fill the lower end of the tube by plunging it again and again forcibly into the jar containing the material for the suppository, and packing it solid by downward pressure of the piston. Then I apply the suppository by passing the end of the tube into the cervical canal, and force it out by pushing in the piston. The suppository will then be in the desired place. Five grams of the iodoform may be used at a time. Unlike the gelatine pencils of iodoform, which are so widely advertised, this melts and takes effect at once, and causes no pain.

“*Fissure of the Female Urethra.*—This troublesome and intractable ailment yields promptly to the use of the same suppository which I have advised for uterine catarrh. Their use is commonly followed by the disappearance of those symptoms which are always associated with fissure of the urethra, and which so often lead to the false diagnosis of cystitis.

“*Gonorrhea in the Male.*—The same suppository, made in the same manner, and applied with the same instrument, may here be advantageously employed, care being taken to pass the suppository above the inflamed part. This treatment of gonorrhea I have used for nearly two years, and I can testify to its great efficacy. It is a suitable substitute for injections, and is more sure in its effects. The application should always be made by the doctor, when possible. I have been pleased to see that Mr. W. Watson Cheyne, in a late number of the *British Medical Journal*, contributes a very definite testimonial to the value of urethral suppositories, or pencils, in the antiseptic treatment of gonorrhea. I would, however, give the preference to the method of preparation and application which I have here described, as being simpler and perhaps more effectual than his. It must be remembered that the popular addition of balsam Peru in these suppositories is objectionable, by reason of its irritating qualities.”—(*Amer. Practitioner*, Dec., 1880.)

(b.) *Poisoning by.*—In the Municipal Hospital of Dresden two

syphilitic women under the charge of Dr. Oberlaender exhibited symptoms of poisoning, consequent on treatment by iodoform internally. One of the patients had taken, within eighty days, 42 grams (650 grs.) of the medicament, administered in pills containing 1 centigram. She first complained of dizziness, weakness, and diplopia. After two days she fell into a deep sleep, and this was followed, a day and a half later, by a phase of violent excitement, with intense headache, talkative delirium, and feeling of anxiety. To this succeeded prostration so marked that she could not rise up; then the earlier symptoms recurred for a time, after which all the morbid symptoms gradually disappeared, having altogether lasted for a fortnight. The second patient, aged sixty-nine years, experienced the first signs of poisoning at the end of seven days of treatment, during which she had taken a total quantity of 7 grams (108 grs.) of iodoform. In her case the chief symptom was a period of deep sleep, lasting for five days. She very slowly roused, and for several weeks was affected with marked giddiness and weakness.—(*Répert de Pharm.*, Mars, 1881, from *Deut. Zsch. für prakt. Med.*, 1878.)

[Binz has shown that iodoform, administered internally, exercises a narcotic action upon the dog, and still more upon the cat. See Report, Dec., 1879.]

4. *Resorcin*.—This body, one of the latest contributions of organic chemistry to therapeutics, is formed by fusing certain resins or gum-resins (*e.g.*, galbanum), or some dye-woods, with caustic potash. It occurs in colourless crystals, is very soluble in water, and possesses a sweetish and harsh taste. Chemically allied to phenol (carbolic acid), it shares its properties, and its applications to medicine have been investigated by several observers in Germany and France. Andeer has shown that, when perfectly pure, in a 1 per cent. solution, it arrests the development of every species of putrefaction fungi. In the crystalline state resorcin cauterises with the same energy as nitrate of silver, and leaves no cicatrix. Resorcin  $C_6H_4 \begin{smallmatrix} OH \\ OH \end{smallmatrix}$  is soluble in animal fats and oils, and facilitates their emulsion, and is easily manipulated pharmaceutically.—(*Répert. de Pharm.*, Mars, 1881, from *Centralbl. f. med. Wissen.*)

M. Dujardin-Beaumetz has employed resorcin locally with advantage in indolent ulcerations; and in Breslau, in 1880, it was used internally with success in infantile cholera. The dose for a

baby a few months old was 10 to 30 centigrams, in infusion of chamomile.—(*Journ. de Méd. et de Chir.*, Mars, 1881.)

The following summary (*Pharm. Journ.*, April 23, reprinted from *New Remedies*, April, 1881) is derived from papers lately published :

The first experiments on the effects of the dihydroxylbenzols, (that is hydroquinone, pyrocatechin, and resorcin) were instituted by Dr. L. Brieger, of Berlin, who found that all three possessed antifermentative as well as toxic properties. It suggested itself, therefore, to use them in place of phenol or carbolic acid, and among them hydroquinone seemed to be specially valuable on account of its lesser toxic effects. This body gave especially favourable results in gonorrhœa. The pains usually accompanying every fresh gonorrhœa disappeared as soon as the gonorrhœal flow stopped, and the latter was quickly accomplished by using solutions of hydroquinone of 1 to 2 per cent. But it was also employed successfully in infectious eye-diseases, such as blennorrhœa, &c., being particularly valuable, because it exercises no irritating action on the cornea. Resorcin yielded less favourable results; injections of solutions of this body in the urethra caused great pain without at all diminishing the flow.

While Dr. Andeer's experiments chiefly pointed out the usefulness of resorcin as an antiseptic, it was shortly afterwards shown by Professor Lichtheim, in Berne, that it is also a powerful antipyretic, which in magnitude of effect and certainty is in some respects even superior to quinine and salicylic acid. On giving to a patient in high fever a dose of 2 to 3 grams of resorcin, its effects are noticed after a few minutes; dizziness and buzzing in the ears, reddening of the face, lustre of the eyes, acceleration of breathing and also of pulse, but the latter irregularly. After ten to fifteen minutes the skin begins to become moist, gradually the secretion increases, and after about fifteen minutes the patient is in a profuse perspiration. As soon as this appears, the before-mentioned symptoms of excitement disappear, and there ensues a rapid subsidence of the fever. The pulse decreases in frequency and the temperature falls, both being normal about one hour after the drug has been administered. The reduction of temperature amounts in such cases to about 3° C. and more, and the pulse is reduced by more than one third. But while resorcin thus exhibits more powerful effects than quinine or salicylic acid, it has the disadvantage that the duration of these effects is comparatively short. Yet even this drawback alone would not seriously interfere



with its common use as an antipyretic, for a drug capable of rapidly causing the subsidence of fever, even for a comparatively short time, would be highly valuable. The real objection is, that resorcin causes symptoms of excitement, which in some cases are very prominent. The patients become delirious, their utterances become partly inarticulate and unintelligible, and sometimes a slight convulsive tremor of the hands and fingers is noticed. But these symptoms pass rapidly away, though they are disagreeable enough to retard the employment of resorcin internally as an antipyretic.—(Cf. Art. on Resorcin and its Antipyretic Action, in "Periscope," *Dubl. Med. Journ.*, Jan., 1881.)

These results were also obtained and confirmed by Dr. L. Brieger, particularly so far as resorcin is concerned. With hydroquinone the results were more favourable; doses of 0.2 gram of the latter were sufficient to reduce the temperature without producing excitement; but on raising the dose to 0.8 or 1.0 gram these symptoms made their appearance. The antifebrile effect of both resorcin and hydroquinone passes off rapidly in a short time. Hydroquinone has an advantage for hypodermic employment. Being entirely free from caustic properties, solutions of it produce no more pain or damage than injections of pure water. It is recommended to employ a 10 per cent. solution, and to inject two hypodermic syringes full of this.

5. *Pilocarpin in the Treatment of Alopecia*.—A woman consulted Dr. André on account of complete baldness which had developed without any apparent cause. She had lost not only the hair of the head, but also the eyebrows and eyelashes, with the axillary and pudendal hair. Subcutaneous injections of hydrochlorate of pilocarpin were practised on the scalp. The effects of the first injections of 1 cgrm. of the drug were very well marked, but they gradually diminished in intensity. A sensation of pricking was produced on the skin, which soon swelled and became bright red, and, within three minutes, drops of perspiration exuded from the skin. At the same time there was a vivid sensation of burning, with hyperæsthesia of the skin lasting ten or twelve hours. About a month after the first injection the hair was sprouting freely, and three months later, after ten injections, the head was abundantly covered with hair 2 cm. long. At the same time the eyelashes and the axillary and pubal hair reappeared, and later on the eyebrows.—(*Journ. de Méd. et de Chir.*)

## PART IV.

### MEDICAL MISCELLANY.

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*Reports, Transactions, and Scientific Intelligence.*

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#### TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

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SESSION 1880-81.

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GEORGE JOHNSTON, M.D., President.

ALEXANDER NIXON MONTGOMERY, M.K.Q.C.P., Honorary Secretary.

*Wednesday, May 4, 1881.*

DR. FITZPATRICK in the Chair.

*Aneurism of Arch of Aorta with Consolidation of Contents of Sac, consequent on Treatment by Iodide of Potassium.* By G. F. DUFFEY, M.D., F.K.Q.C.P.

THE specimen of aneurism of the thoracic aorta I exhibit derives its chief interest from the fact that it furnishes an example of that disease in a condition approaching to cure by the coagulation of the blood within the sac of the aneurism, such result being fairly attributable to persistent treatment with large doses of the iodide of potassium. It is also of interest to note that the aneurism was not the immediate cause of the patient's death.

The subject of the case was an army pensioner, aged forty-two, the former occupation of the individual thus at once reminding us of the statement that aneurism is "eleven times more frequent among soldiers than among civilians."<sup>a</sup> He was admitted into Mercer's Hospital on the 13th March, 1880, under the care of my senior colleague, Dr. Mason. A prominent pulsating tumour about the size of a small orange then presented itself at the right side of the manubrium sterni, extending behind the third and the second costal cartilages of the same side. The tumour was soft and elastic to the touch, and evidently contained fluid blood. There was no bruit. The heart appeared to be in every way normal. The left radial pulse was slightly weaker than the right. He

<sup>a</sup> Lawson, quoted by Aitken, *Sci. and Practice of Med.* 7th Ed. Vol. II., p. 655.

complained of severe shooting pains across the chest, running down both arms to the finger-tips, and occasionally upwards to the back of the neck. There was also slight bronchitic cough and scanty expectoration, but no other symptoms. Dr. Mason at once prescribed iodide of potassium in doses of  $7\frac{1}{2}$  grains, three times a-day, and directed him to remain quiet in bed.

On the 18th May, in Dr. Mason's temporary absence, the patient came under my care. He was not then suffering so acutely from the neuralgic pains, and there was less pulsation in the tumour. I increased the dose of the iodide, first to 25 grains three times a-day, subsequently to 30, and eventually to 40 grains *ter in diem*. The effects of these large doses was most satisfactory. They produced no unpleasant effects. He obtained complete relief from the pains; the tumour materially diminished in size—it became quite firm and hard to the touch; and the pulsation in it, from being forcible, elastic, and visible, was now barely perceptible. He was discharged from hospital in this satisfactory condition on 23rd July, 1880, after being under treatment therein a little over four months. He was directed, however, to continue taking the iodide in half-drachm doses thrice daily; and during the course of several months subsequently he was in the habit of frequently coming to the hospital dispensary, walking easily to and from his home near Portobello (a distance, I suppose, of at least one and a-half mile each way), for the purpose of getting his medicine repeated.

On the 7th of February last he presented himself at the hospital, complaining of slight cough. His symptoms, which were of an ordinary bronchitic nature, were easily relieved after a stay of four days in hospital. There was little change except for the better to note as to the aneurism.

He came to me again on the 9th of last month (April), and it was perceptible at a glance that he was then moribund. He was deadly pale and cold, greatly emaciated, and his breathing rapid and laboured. He said he had caught a bad cold a fortnight previously, and that he had a very severe cough. Stimulants were given, but he sank gradually, and died early the following morning.

The *post mortem* was made five hours after death. Only the thorax could be examined. The anterior wall of the sac was intimately adherent to, and had eroded a large extent of, the posterior surface of the manubrium sterni and of the first segment of the mesosternum, and had to be dissected away from the bone by means of a knife. The bone itself was so thinned by pressure as to be translucent. There were firm adhesions between the aneurism and the anterior edges of the upper lobes of both lungs. The lower lobe of the left lung was completely solid from recent pneumonia—the immediate cause of death—and there was collateral hyperæmia and œdema of the upper lobe of the same lung, and of the

right lung. To the naked eye the heart and its orifices, with their valves, appeared healthy. The circumference of the sac of this circumscribed false aneurism measures thirteen inches. It is globular in shape, and on section is seen to spring from the right side of the vessel, commencing abruptly two inches above the semilunar valves, at its sinus, and extending along the transverse portion of the arch to a short distance beyond the orifice of the left subclavian. With the exception of a channel of about the calibre of that of the aorta of an adult, the sac of the aneurism is filled with fibrin, deposited in a laminated manner, its cross-section measuring when quite recent  $4\frac{1}{2} \times 3\frac{3}{8}$  inches. This fibrin, as usual, is firmer, denser, and paler circumferentially than towards its centre. A flattened band of fibrin, attached by a broad pedicle to the clot, floated free within the channel of the aorta. The remainder of the arch of the aorta is atheromatous, but the great vessels arising from it are not materially affected.

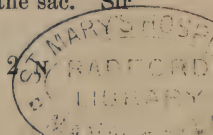
The result of the medicinal treatment in this case is, I think, very encouraging. Although the recumbent position was enforced, it was not, I have reason to believe, very strictly maintained; and there was no special restriction placed upon the patient's diet. It would be foreign to the scope of this communication to discuss the probable mode of action of iodide of potassium in the treatment of aneurism. In the case I have brought under the notice of the Society life was probably prolonged and pain was indubitably relieved. "When we reflect upon the entire absence of risk to the patient from the treatment, and the almost absolute certainty of relief to his sufferings being at least attained, I think we are warranted in saying"—with Dr. George W. Balfour, whose words I quote—"that no treatment for aneurism, and especially for internal aneurism, hitherto devised, holds out anything like an equal prospect of relief, if not of cure, with that by the iodide of potassium."<sup>a</sup>

DR. DUFFEY added that he had at present at Mercer's Hospital a case of aneurism of the aorta, which he was treating with 35-grain doses of potassium, and great improvement had been already evinced.

The CHAIRMAN said the question was whether it was the treatment by iodide of potassium that had the effect of consolidating the sac.

DR. HENRY KENNEDY said it was still an open question how far it was the iodide of potassium that produced the consolidation, although no doubt it afforded relief to the patient. They had evidence that in numerous cases consolidation had taken place, although no iodide had been given; and in the Museum of the Royal College of Surgeons were examples of aneurism that had been found consolidated after death, and the existence of which had never been suspected during life. Mr. Tufnell's treatment under many circumstances consolidated the sac. Sir

<sup>a</sup> Edinburgh Med. Jour. July, 1868. P. 42.





William Gull, in a paper to which a sufficient amount of attention had not been paid, observed that aneurisms and other tumours in the thorax, by their interference with the action of the lung, had a tendency to produce disease in the lung itself. He (Dr. Kennedy) had himself seen cases of aneurism in which there was a large cavity in the lung before the patient died.

DR. HAYDEN was of opinion that iodide of potassium was useful in the treatment of aneurism to bring about consolidation of the contents of the sac; but he was by no means certain that that property was not common to all alkaline salts. It was certain that they possessed the property of weakening the force of the heart, and of thereby bringing about a state of minor tension of its walls. He had made a trial on a large scale of the use of iodide of potassium, and his experience of the results had been rather encouraging. He could not agree with Dr. Kennedy's observations as to the effect of tumours in the chest upon the lungs. In fact he thought there was almost an incompatibility between thoracic aneurism and ordinary chronic disease of the lungs, such as tuberculosis, chronic pleuritis and so on. He did not include effusion into the pleura, which might be the result of the pressure of a tumour. In cases, also, where a large tumour interfered with the pulmonary circulation, under the influence of any ordinary cold, it was not at all unlikely that congestion of the lungs would take place. But with these two exceptions he was quite of opinion that disease of the lungs was not by any means frequently associated with intrathoracic tumours, and least of all with aneurism. The specimen before the Society was the largest thoracic aneurism he had seen, with one exception, and it was the best example of a cured aneurism that he had seen.

DR. FINNY said one of the first things that struck him in this case was the absence of hypertrophy of the left ventricle. It was a point not as thoroughly recognised as it ought to be, even after the teaching of Dr. Stokes, who held that aneurism of the arch of the aorta, no matter how near to the ostium of the aorta, was not necessarily followed by eccentric hypertrophy, or by any hypertrophy of the left ventricle. The present specimen was confirmatory of that view. Nature's method of curing aneurism was by depositing layers of fibrin in the sac from without inwards. Of these layers the outer were the harder, and the inner, being washed by the blood, were the softer. Anything which tended towards that fibrinisation of the blood would tend towards a cure; and iodide of potassium was one of the best medicines not only for effecting this, but also for relieving the pain. Greater honour ought to be paid to Mr. Tufnell's treatment by rest. Iodide of potassium aided the rest by lowering the action of the heart, and consequently diminishing the tension of the vessels. Although in many instances consolidation of the sac had occurred in his experience without iodide of potassium, yet he

looked on that medicine as a great aid. Mr. Tufnell's treatment did not involve starvation, as the opponents of it represented, but aimed only at diminishing the amount of fluid in the blood by giving food of such a nature as to produce the greatest amount of fibrin, and also by keeping the patient in a horizontal position, so as to quiet the action of the heart. Mr. Tufnell's treatment was inefficacious where the sac was composed partly of the walls of the ruptured vessel and partly of bones in contact with it. Unless the wall of the vessel or some analogous membrane were in contact with the blood, fibrinisation did not take place. This was exemplified in an aneurism which he showed at the Pathological Society. Under the treatment in question the anterior portion of the sac was perfectly consolidated; but there was no back to the aneurism except the bones of the vertebræ, and no fibrin was deposited there, although those bones were washed by the blood.

DR. DUFFEY, in reply, said that according to his recollection of Sir William Gull's paper, the particular effect of intrathoracic tumours to which he referred was not so much an interference with the nervous functions which Dr. Kennedy had spoken of as with the circulation and consequent nutrition of the lungs by pressure on the bronchial arteries. It was a well-recognised fact that, apart from the coexistence of valvular cardiac disease, aneurisms did not cause hypertrophy of the heart; and this might perhaps be explained by the fact, to which Dr. Reuben Harvey had called his attention, that an essential condition of all aneurisms was one of diminished vascular tension, whereas they knew that the opposite condition—viz., increased vascular tension, was the usual cause of hypertrophy of the heart.

DR. HAYDEN read a paper on "The Use and Abuse of Respirators." [It will be found at page 494.]

DR. QUINLAN said he was sure they all agreed with Dr. Hayden that respiration should take place through the nose and not through the mouth. That opinion was endorsed by the result of observation of the lower animals. A horse coming in after the hardest gallop did not breathe through his mouth, and the statement was also true of ruminant animals. He believed the best protection against catching cold was the practice of sluicing the whole head, face, and neck every day with cold water. When passing from warm into cold air it was advisable to keep the mouth closed. They were apt to forget to do that; and he thought that the putting on of an ordinary respirator was useful, because it covered the mouth and because it reminded them not to talk to people in cold air. Nasal respirators he utterly condemned, but he had himself experienced the advantage of wearing a respirator under the circumstances he had mentioned. He disbelieved in mufflers.

DR. J. W. MOORE remarked that healthy infants always breathed with

the mouth closed. There was no doubt that breathing through the mouth was an acquired habit.

DR. FINNY said he had adopted the practice of putting a small quantity of cotton wadding up the nostrils on going from warm into cold air, and had found the greatest benefit from it.

DR. HAYDEN, in reply, said it should not be forgotten that the act of speaking involved an act of expiration, not one of inspiration. He never breathed through the mouth, and yet he never experienced the slightest impediment in addressing his friends.

DR. DUFFEY made a communication on a "Case of Hepatic Abscess." [It will be found at page 481.]

DR. FINNY said the operation of tapping an abscess in the liver was so rare that the record of a successful operation of the kind was interesting. He had a case in the City of Dublin Hospital which was pronounced by Dr. Benson and himself to be one of hepatic abscess. It pointed between the seventh and eighth ribs. The patient was a woman aged about thirty-eight. Aspiration was performed with an instrument of larger size than that described by Dr. Duffey. The matter drawn off was of a brownish colour, inodorous, and had not the appearance of laudable pus. A second aspiration was performed in the same place, but there had been pretty high fever from the beginning, and the patient died.

DR. QUINLAN said a very simple plan of ascertaining whether purulent matter was hepatic or not was to digest it in water, filter, and observe whether it obscured the violet of the solar spectrum. Dr. MacMunn, of Wolverhampton, had improved upon this plan by substituting chloroform. The action of biliary colouring matter upon the spectrum was described in a paper published by himself last year in the "Proceedings of the Royal Irish Academy." Of course hepatic abscesses were sometimes met with where the pus did not exhibit hepatic coloration.

DR. HENRY KENNEDY observed that several years ago a woman, aged forty-five, was admitted into Sir Patrick Dun's Hospital, suffering from a tumour in the right hypochondrium. He came to the conclusion that there was something wrong with her liver. On the night of the day she was admitted she was suddenly seized with violent dyspnoea, and before any assistance could be given to her she was dead. On a *post mortem* it was ascertained that the disease must have commenced with hydatids of the liver, and that an abscess was afterwards formed, for a quantity of pus mixed with hydatid cysts was found in the liver. The diaphragm had given way, and pus had been poured into the pleura. On opening the latter a very large hydatid was found which had not burst, and which was the cause of the woman's death. The aspirator was of enormous advantage at the present day in the treatment of cases of this

kind. The cases of abscess of the liver that he had seen had been more or less associated with diffuse inflammation, the result of injuries of the head. He had seen several cases in which there were a number of small abscesses in the one liver.

SURGEON-MAJOR JACKSON said that a couple of years ago he aspirated a man at Shorncliffe for a large abscess of the liver, but he died a couple of days afterwards. In cases of this kind the thermometer was of very little use. Enormous deposits of pus were often formed in the liver, and scarcely any indication of it would be given by the thermometer.

DR. DUFFEY having briefly replied,

The Society adjourned until next November.

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#### OCULAR LESIONS OF CEREBRAL AND SPINAL SYPHILIS.

DR. CHAS. S. BULL, Lecturer on Ophthalmology in the Bellevue Hospital Medical College, New York, reports, in the *American Journal of the Medical Sciences* for April, 1881, five cases of various eye-troubles from central nervous disorder, the result of syphilis. While these accidents generally accompany the later manifestations of constitutional syphilis, the statement of Dowse that the nervous system is rarely, if ever, affected by the syphilitic poison whilst in the secondary stage, he does not think can be accepted, since the change from the secondary to the tertiary period is often so very rapid and ill-defined that the cases in which a paralysis of one or more ocular muscles of probably central origin has been found associated with a roseola are, by no means, uncommon. In the opinion of Dr. Bull syphilitic meningitis ending in sclerosis may exist in the early secondary stage. Ocular lesions may and do occur within the first year of constitutional affection, and sometimes as early as the third or fourth month; on the other hand, they may be almost indefinitely delayed. The oculo-motorius is affected most commonly, and ocular paralysis is frequently the initial lesion of cerebral syphilis. Visual troubles are less common than the affection of the extrinsic muscular apparatus, the ophthalmoscope revealing (1) optic neuritis through all its stages up to the choked disc, or inflammatory atrophy; (2) simple white atrophy without evidence of preceding inflammation. These appearances cannot be taken as establishing anything *precise* or *special* in regard to the *nature* or *location* of the lesion, but they are evidence of a grave lesion, which may lead to most serious consequences, because it is intra-cranial. In all cases of cerebral syphilis such examination, in the opinion of Dr. Bull, should be made, for even a well-defined optic neuritis is not incompatible with the preservation of visual acuity.



## PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—ARTHUR WYNNE FOOT, M.D.

Secretary—E. H. BENNETT, M.D.

*Case of Tumours of the Pelvic Organs and Peritoneum.*—DR. WALTER G. SMITH said: Agreeably to a suggestion made by the President at the last meeting, I have brought down slides which I made in the course of last week from specimens which I showed on this day week. I will not go back on the case further than by mentioning that in the specimen I showed last Saturday there were three appearances which were worthy of notice:—One was the development of a number of peritoneal tumours or nodules under the diaphragm or elsewhere; the second was the thickening of the bladder for three-quarters of an inch at the sides and not at the fundus; the third was a large uterine tumour projecting at the back of the uterus into Douglas's space. The naked-eye appearances of the peritoneal nodules suggested that they were carcinoma, and the histological appearances place that beyond a doubt. The second question is as to the nature of the uterine tumour. Viewed macroscopically, from its position extending to Douglas's space, and from its separability from the adjoining tissues, and from its appearance on section, it looked like an ordinary fibroid. The third point is as to the nature of the thickening on the sides of the wall of the bladder. It is made up in great part, if not entirely, of interlacing, wavy, fibroid tissue. Whether they are all muscular cells or not is the point on which I desire information—in other words, whether it is true hypertrophy or fibromyoma of the bladder.

DR. HARVEY.—As regards the growth in the uterus, there can be doubt that it is carcinomatous. There is no doubt that the cells are epithelial, of either a natural or a pathological kind. The arrangement of the epithelial cells is tubular, and the appearances are such as to suggest that we may be dealing with something not absolutely carcinomatous. The section having been taken from behind the uterus, a considerable distance from the surface, we should be more inclined to regard the development as carcinomatous than if it were taken from near the surface, for it is hard to suppose that with anything but carcinomatous disease we should have the epithelial element penetrating so far back. As to the bladder, I cannot find any trace of carcinomatous structure in it at all. In certain parts of it we have a very rapid formation of small

muscular element, in other portions we have somewhat fibrous structure, but through the whole of it we have nothing of a carcinomatous nature, and it may be simply chronic hypertrophy.

DR. BENNETT.—The microscopic examination of the tumour in the uterus shows it to be certainly benign. The apparent mixture of carcinomatous disease with a benign tumour certainly raises a question of importance. No doubt the cancerous disease exists in the peritoneum, and it probably originated in the ovary; but it would be novel to find an ordinary fibrous tumour developing carcinoma.

Dr. Smith undertook to send the specimens to the Committee of Reference.—*December 18, 1880.*

*Report of the Committee of Reference.*—"Uterus, bladder, and peritoneal nodule examined. Sections taken from each portion submitted by Dr. Smith exhibited unmistakable characters of carcinoma. The epithelial cells in each were apparently identical, and have a tendency to arrange themselves in tubes somewhat resembling the glandular tubes of the uterus. We infer that the primary disease was uterine."—*March 11, 1881.*

*Aneurism of the Abdominal Aorta.*—DR. NIXON said: This specimen is an aneurism of the aorta which is interesting in two points. It consists of the heart, aorta, and part of the abdominal organs of a carpenter, aged forty years, who was admitted into the hospital on the 6th of October last. The man had been complaining on and off for twelve years of pain in his back and about the middle of his spine. He had had an immunity from pain for about four years, but some months before he presented himself at the hospital the pain had recurred, and had attacked him in the stomach and also by shooting between the shoulder blades, and it was for this that he sought relief. He attributed the origin of the pain to his taking a large quantity of drink, by which he meant a large quantity of fluid, for he was of temperate habits. I questioned him as to his occupation, but elicited nothing very marked except that he worked with a bit and brace, pressing the end of the instrument against the abdominal wall. On examining him in bed I found a very distinct epigastric pulsation. There was an obscure feeling of a deep-seated tumour, the impulses of which were of a distinctly exceptional character. On examining him with a stethoscope I found that the tumour was situated about three inches above and one inch to the left of the umbilicus; and on examining him further with the stethoscope in a horizontal position I distinguished a well-marked double bellows murmur over the tumour, which disappeared when he was placed sitting up in bed. On putting him prone I could very distinctly hear along the spine the double sound. There was no difficulty as to the nature of the case. The point at issue was—Was it an aneurism of the celiac axis or of the abdominal aorta? At first, from the approximation of the tumour

to the surface, I thought it was an aneurism of the cœliac axis, but the presence of the double sound over the back led me to conclude that it was one of the abdominal aorta. In the progress of the case the tumour approached the surface of the abdominal parietes, and became distinctly localised, so that one could grasp it with the hand. The man was admitted on the 6th of October, and about the 20th a very marked change took place in the feel of the tumour; it became perfectly solid and lost its eccentric pulsation. The pulsation from the vessel behind remained, but the eccentric pulsation was gone. The systolic murmur also entirely disappeared, but we could still distinctly hear the double sound in the back. The pain became more severe, and of the usual paroxysmal character. It sometimes caused the patient to bend forward, and he described it to be of a boring character. It was always relieved by a hypodermic injection of morphia. During the progress of the case he suffered from very marked constipation. Towards the end he became jaundiced, had considerable irritability of stomach, and his tongue became dry and glazed. The treatment which had been adopted at the outset had then to be abandoned. I may mention that it consisted of the Tufnell dietary, rest, ice to the tumour, and acetate of lead. After a time the acetate of lead did not seem to be doing much service, and was exchanged for large doses of iodide of potassium in combination with ergot of rye, but in consequence of his stomachic condition this treatment had to be given up. The patient became gradually more and more asthenic; he lost power over his lower limbs and ultimately over his upper ones, and a couple of days before his death was unable to raise his arm from his side. He became more and more stupid and drowsy, and gradually passed into coma, and died on the 8th of January. The points specially worthy of attention are the tumour which we felt at first to have a distinctly exceptional character, the single systolic murmur, and the double sound which occurred in the horizontal but disappeared in the sitting position. In the progress of the case the tumour assumed a distinctly solid feel, and with the apparent consolidation of blood in it the murmur disappeared, while the double sound in the back remained all through. A *post mortem* examination was made by Dr. Banks. With regard to the heart the only remarkable feature is the hypertrophy of the walls of the left ventricle. The valves on the left side are healthy. Tracing down the aorta immediately below the diaphragm we found a very large fusiform aneurism of the abdominal aorta, with no attempt whatever at deposition of coagulum in the aorta. The coats present distinct evidence of atheroma. Springing from this fusiform aneurism is a secondary aneurism of the cœliac axis. The aneurism of the cœliac axis is limited strictly to the trunk of the vessel, but it lies above the pancreas, and involved the hepatic vessels so as to press upon the bile duct, which accounts for the jaundice. The aneurism of the abdominal

aorta is surrounded by the semilunar ganglia and the nerves arising from them, which accounts for the paroxysms of pain that he suffered. Towards the end of the case his pulse became exceedingly rapid; before the time he came under observation it had varied from 70 to 80, but for some weeks before his death it rose to 120 and sometimes 130. Whether this rapid increase in the pulse was caused in any way by the pressure the tumour must have exercised upon the cœliac plexus I do not presume to say. The kidneys were healthy.—*January 15, 1881.*

*Carcinoma of the Prostate Gland.*—DR. BARTON said: This bladder and prostate gland were taken from the body of a man aged sixty-four, who was admitted into the Adelaide Hospital, under the care of Dr. Little, in the first week of last December. Dr. Little, seeing that he was suffering from retention of urine, requested me to see him. I did so, and was struck with the appearance of the patient. He had the unmistakably pallid, anxious aspect or physiognomy of cancerous disease. Dr. Little was also struck by it, and expressed the opinion that he was suffering from malignant or carcinomatous disease. On placing my hand on his abdomen, as he lay in bed, I at once detected a distended bladder, but accompanied by some unusual characters. One was that the tumour was not as high as the umbilicus, and another that it was much harder and more solid than is usually the case. Some of those standing by compared it to a contracted uterus, others to a large cricket-ball, and others to a child's head. I found that a large-sized instrument with a prostatic curve entered the bladder without difficulty; and I drew off about a pint and a-half of clear urine. Inserting my finger into the rectum, I distinctly felt an unusually enlarged and very hard prostate. I examined in the groin and elsewhere for enlarged glands, but could find none; I took him to my ward, and treated him for the remainder of his life, which was about a month after the first examination. The urine was drawn off twice a day, a catheter being easily introduced. On two occasions on which the resident student introduced the instrument he had smart hæmorrhage; but this did not prevent me from introducing it, without hæmorrhage occurring, except during the last twenty-four hours of his life. After about a fortnight, or more, of the regular passage of the instrument, he began to show unequivocal signs of cystitis. He began to pass ropy mucus, and the bladder contracted more and more; and, finally, it became unnecessary to use a catheter at all, because the bladder was contracted deep down into the pelvis, and the urine dribbled constantly into the bed. The urine now was highly albuminous, but contained no purulent matter, but a quantity of ropy mucus. I should say that he had not any very marked or acute pain; he was constantly complaining of general pain about the pelvis and the urinary organs, but his complaint was not of pain of a very acute kind. As the



cystitis continued he failed rapidly in appetite and strength, and died on the night before last without any coma. On examination we found the kidneys were in a state of white degeneration, the capsules peeling off readily. The prostate gland is before you. The feel was not that of chronic hypertrophy of the gland, but of a scirrhus hardness. The bladder itself, on being opened, presented a remarkable appearance. There were numerous velvety growths from the surface of the bladder, the whole having a honeycombed appearance, as of the epithelium being raised by growths, between which the inflamed mucous membrane was visible. At the prostatic portion there are a number of loose folds, which feel firm and hard, not presenting much of the feel of a mucous tumour, but rather of a tumour projecting up from the mucous membrane, with some hard material forming the main portion of it. The explanation of symptoms observed during life is simple enough. We see a sufficient amount of growth inside the orifice of the urethra to account for the retention of urine. We also see the contracted bladder, and the amount of cystitis present. As to the nature of the tumour different opinions will be held. As to the existence of scirrhus of the prostate, the Scotch verdict of unproven seems to apply. It is admitted on all hands that it is a very rare affection. Most authors describe carcinomatous disease occurring in this gland as of an encephaloid or melanotic form; but, as far as my examination has gone in the case, I am not able to refer the appearances to anything save scirrhus carcinoma. Accurate microscopic examination is still needed, however, to enable us to pronounce on the nature of the tumour with any confidence. Still, having regard to all the evidence already within our knowledge, I think it strongly in favour of the disease being scirrhus of the prostate.—*January 15, 1881.*

*Report of the Committee of Reference on Dr. J. K. Barton's Case of Diseased Prostate.*—"The portion of the prostate from which the vesical tumours spring, underlying the apex of the trigone, showed extensive infiltration of large epithelial elements; the structure of the projecting bladder tumours was distinctly carcinomatous."

*Vesical Calculus extracted by Lithotrity.*—MR. WHEELER said: This is a calculus extracted by lithotrity. It occurred in a gentleman of about sixty-eight years of age. He had been suffering from this stone for two or three years, and had endured a great deal of inconvenience. He continually passed water with a great deal of irritation, and could not easily sit in every position. He consulted his medical adviser, and was ordered to Harrogate, but did not improve. There was no difficulty in diagnosing that he had stone in the bladder; you could see it as he walked. He was of a nervous temperament, and there was some difficulty in getting him to allow a sound to be passed. I passed in a

Thompson's sound and struck the stone. The removal of the stone was not accomplished at one sitting, according to the recommendation of Biglow. He had a comparatively small urethra and enlarged prostate, and also a weak heart, and from these circumstances and the irritation in his bladder I was afraid to keep him long under ether. Consequently it took three sittings before I crushed the stone, and in the intervals a good deal of *débris* came away. The stone is phosphatic and very rough. During the three years over which the symptoms extended he had suffered more or less irritation. With respect to the two other calculi of oxide of lime that I recently showed, one of them was ten and the other three years in existence without giving the slightest sign until their surfaces became roughened. This one weighed two drachms. It is now a year and eight months since I performed this operation of lithotrity, and the gentleman has had no return of the symptoms, and is now in perfect health.—*January 15, 1881.*

*Petechial Typhus.*—DR. DUFFEY exhibited the viscera of a man, aged thirty-seven, who had died sixty-five hours after his admission into Mercer's Hospital. No satisfactory previous history of his illness was obtained other than that he had been "lying" for a week at home, and that other members of his family had "fever." He was extremely weak on admission, and his extremities and body generally were covered with a purpuric eruption. There was no other characteristic rash. His temperature was 102° F., and his pulse, which could hardly be felt, 102. Bronchitic râles were heard over the front of the chest. On *post mortem* examination it was found that the lower lobe of the left lung was in a state of splenisation; its free edges were emphysematous and the upper lobe œdematous. The right lung was also emphysematous. Its upper lobe posteriorly contained a large infarct, the vessels leading to which were plugged. The lower lobe was congested, and also contained a small infarct. The spleen was slightly enlarged, and there was general hyperæmia of the small intestine, but no ulceration of its mucous membrane.—*January 22, 1881.*

*Necrosis of the Laryngeal Cartilages after Enteric Fever (Perichondritis Typhosa).*—DR. DUFFEY said: This specimen illustrates an uncommon sequela of typhoid fever—namely, necrosis of the cartilages of the larynx. It was taken from the body of a man, aged twenty-seven, who died on the seventy-ninth day of his illness, and whose case was therefore a very protracted one. It was also one of the severest cases of typhoid fever that one could meet with, and the patient was consequently unusually prostrated. At a time when he had apparently become quite convalescent he was, however, attacked by symptoms of the complication which subsequently proved fatal in seven days. The first laryngeal

symptom complained of was slight sore throat, which he did not lay much stress on and attributed to cold. After a few days aphonia and characteristic stridor were noticed. There was also slight difficulty of swallowing, and cough with difficult expectoration of frothy mucus. There was no difficulty at any time in the entrance of air into his chest. On the morning of the day of his death a consultation was held as to the expediency of the operation of tracheotomy, but in the absence of all symptoms which justify that operation it was held to be unnecessary. On the evening of that day he expressed himself as feeling relieved by the application of the local measures that were persistently employed, but notwithstanding he became gradually weaker, and died on the night of the seventh day after the laryngeal symptoms made their appearance. On removing the larynx a large abscess the size of a walnut was found between the pharynx and the arytenoid and cricoid cartilages. In the specimen portions of the cartilages can be felt bare and loose at both sides of the cavity of the abscess. The abscess had opened laterally by a small circular opening on each side, but had not broken into the larynx. There was no obstruction apparent in the rima glottidis, nor any ulceration visible in the interior of the larynx. The usual position of ulceration of the larynx in enteric fever is stated to be near the posterior attachment of the vocal cords, and it is one of the principal causes of the perichondritis which was evidently the starting-point of the necrosis of the larynx in the specimen I exhibit. The perichondritis being associated with purulent inflammation of the tissue causes more or less obstruction of the circulation of the part, and consequently necrosis or death of the cartilage. It is a point for examination whether the laryngeal cartilages in this specimen are not more ossified than is normally the case in the larynx of a man of twenty-seven years of age, or whether, if they are, this may not have been a result of the irritation of the abscess and a predisposing cause to their necrosis.\* I take it that the starting-point of the disease was in the arytenoid cartilages, and that it spread from these to the cricoid, which are also engaged. The intestines are interesting, considering the late period—the seventy-ninth day of the disease—at which death took place. They are extremely attenuated, and several small ulcers, more or less cicatrised, can be seen in different places.

The PRESIDENT.—I remember having had to keep a case of typhoid fever alive for three weeks by artificial feeding while the patient was suffering from a disease of this sort. I had repeatedly to scarify the opening of the glottis, as œdema used to occur. He had symptoms of narrowing of the glottis in addition, and it was only by a curved bistoury being passed into the throat and by deep incisions into the sides of the larynx, as well as by feeding through the rectum, that he was kept

\* Cf. E. H. Bennett. *Proceedings Path. Soc. Dubl.* Vol. VIII. 1880. P. 75.

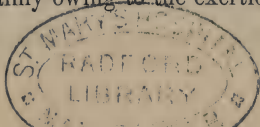
alive for three weeks. I think this disease occurs independently of any ossification of the cartilages.

DR. J. W. MOORE.—There is at present a boy under my care in the Meath Hospital who has typhoid fever, and is also the subject of marked laryngeal affection. His throat has not been examined laryngoscopically, but he has all the symptoms of acute laryngitis. His difficulty of swallowing for two or three days was very great indeed, and I was about to call in surgical aid when he began to improve. He has been treated with constant inhalations of steam. As to ossification of the cartilages, my patient is only fifteen years of age. No doubt the present exceedingly inclement weather predisposed him to the attack.

DR. BENNETT.—It has been long observed that any irritation of the larynx, any suppurative inflammation, or even the presence of a tracheotomy tube in the larynx, will induce ossification of the cartilages. Whether the ossification was subsequent to the abscess is a question. I myself operated successfully on a man for this complication. The laryngitis was originally perichondreal, and it led after one or two attacks to such violent dyspnœa that tracheotomy became necessary. The typhoid fever had ceased, and this was the only residue. The man was going about at the time, and he is still going about. It is six years since I operated upon him; he has worn a tube ever since, and his principal trouble has been how to get supplied with tubes.—*January 22, 1881.*

#### LEGISLATION RELATIVE TO COLOUR BLINDNESS.

THE following measure has recently become law in Massachusetts:—  
 “Chap. 194. An Act relative to the employment by Railroad Companies of Persons affected with Defective Sight or Colour Blindness. *Be it enacted, &c., as follows:—*Sect. 1. No railroad company shall employ or keep in its employment any person in a position which requires him to distinguish form or colour signals, unless such person within two years next preceding has been examined for colour blindness or other defective sight, by some competent person employed and paid by the railroad company, and has received a certificate that he is not disqualified for such position by colour blindness or other defective sight. Every railroad company shall require such employé to be re-examined at least once within every two years, at the expense of the railroad company. Sect. 2. A railroad company shall be liable to a fine of one hundred dollars for each violation of the preceding section. Sect. 3. This Act shall take effect on the first day of July next.” The enactment of this useful measure is mainly owing to the exertions of Dr. Joy Jeffries.





# TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

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SESSION 1880-81.

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President—J. WALTON BROWNE, B.A., M.D.

Hon. Secretary—WILLIAM WHITLA, M.D.

*Second Meeting.*

The PRESIDENT in the Chair.

*Adjourned Discussion on the President's Address.*

MR. FAGAN said:—Mr. President,—It is unfortunate that the discussion on the important matter that formed the subject of your Inaugural Address should have been so long deferred. I dare say there are some members of the Society who feel, as I do, that very many important points touched on by you have escaped their memory; while the general impression remains that your exhaustive *résumé* of the literature of the subject has left one very little virgin ground to work on. As well as I can remember, the drift of your arguments led to the conclusion that chloroform, although not devoid of danger, possessed advantages over ether that would justify you in still adhering to it till a safer and more effectual anæsthetic be discovered. Granted that I am right in quoting this as the expression of your opinion, I am not astonished at your entertaining it. As you state, I think, in your address, chloroform has been given in Belfast 8,000 times, from its discovery up to the present, without mishap attending it. You have had a large experience, and a pleasant one, of its administration; and it is but right to think that so old, so tried a friend, that has ever proved effectual, and never dangerous in your hands, should not be hastily thrown aside, to be supplanted by another more capricious in its action, less effectual, and acknowledged by many to be not entirely devoid of danger. But, while influenced by the same feelings towards the favourite anæsthetic, I cannot altogether turn a deaf ear to the repeated sounds of warning lately rung out to us through our leading medical journals and by some of our most eminent professional *confrères*. One of our most influential journals has more than once, in its editorial pages, warned its readers of the serious responsibility that rests on those who continue to employ chloroform in preference to ether; and this sentiment is endorsed by one of the highest authorities in our profession, in the following words, addressed to the editor:—"Will you allow me to express an earnest hope that you will

continue that advocacy as long as necessary—that is, until ether is universally employed in all suitable cases.” And, again, the same weighty authority says:—“I should consider myself very culpable if I ever permitted the use of chloroform, except in certain cases. I can testify in the strongest possible terms to my own feeling of security with the one and of risk with the other.” Having heard the opinion of such a weighty authority, backed up as it is by numerous correspondents of more or less professional status, are we to consider the case closed, and chloroform condemned either to expulsion from, or to a very obscure corner of, the surgical armamentary? I should be sorry to think so. I believe it will long remain a trustworthy friend both to the anxious surgeon and the suffering patient, and, as the reserve force in the array of anæsthetics, may be called up with confidence when the more favoured ones have failed. It is by such an address as yours, Mr. President, that the merits and demerits of both ether and chloroform will be clearly exposed, and in this way, tested by the light of facts, its proper position will be assigned to each. Let me here define the limits I intend to go to in treating this subject, which, you will allow, is a vast one. The all-important question for us to decide on is—What anæsthetic is the most potent, and at the same time the most free from danger; and as chloroform and ether are, I may say, universally acknowledged to possess these characters more so than any others, I propose to confine myself to a consideration of their relative advantages and dangers.

It may be fairly asked what light can I throw on the subject whose short experience is based on comparatively few cases. In reply to that I may say, I will add my quota to that of others, while I may be permitted to examine ascertained facts by the light of such accumulated experience, and so will satisfy myself, if not others, as to the relative merits of both anæsthetics, and shape my line of action in accordance with the opinion I form. By each of us acting thus, extreme views may be got to harmonise, conflicting opinions to tone down, and we may be free from such damaging advocates of either form of anæsthetic as the correspondent who lately, in one of the journals, hoped that the general feeling of the profession with regard to the use of chloroform would be like that of a medical friend of his who, when asked to give chloroform, said, “He was leaving town next day, and did not want to be detained by a coroner’s inquest, but would give ether if agreeable.”

Where are we to look for data from which to draw a safe conclusion? We must first look to the recorded experience of the advocates of both ether and chloroform in the old and the new worlds, for in both each has had, and has still, its warm defenders. Let us first take chloroform and see what experience has to say in its defence as regards its safety. In our own country Syme administered it in 5,000 cases without a death; he expressed his opinion on this subject in a very laconic manner—“A

case for operation is a case for chloroform." Mr. Lister maintains that deaths from chloroform arise from an overdose and from too long-continued administration. In Germany Nussbaum records 15,000 cases, and Billroth 12,500, and no death. Dr. M'Guire, in America, 15,000 cases and one death; and, during the civil war, 11,500 cases and one death. In the French army, in the Crimea, it was administered in 20,000 cases without a death. In our own hospital chloroform has been administered in 6,000 cases and no death. Then, again, there are other hospitals where there has been one death in 520 administrations. Since 1875, the following list of deaths from chloroform have been reported to the leading Medical Journals of this country:—

1876, - - 10 deaths.		1878, - - 13 deaths.
1877, - - 12 „		1879, - - 8 „

And during the first 10 months of 1880, 20 deaths.

The relative number of deaths to the cases of administration can only serve as indications and approximations, but can never be relied on with any degree of accuracy. Richardson estimates one death in every 2,500 administrations.

Many extenuating circumstances have been brought forward by the advocates of chloroform to lessen the effect of this large mortality—such as self-administration; administration by ignorant and careless persons; cases of death from fright; according to Mr. Lister, an overdose from too long-continued administration; Billroth's theory of peculiar idiosyncrasy; mechanical causes, as death from collection of mucus in the larynx and air-passages; and impure chloroform. This plausible theory may suit such ardent advocates as those who teach with Sédillot that, "*le chloroform pur, et bien employé ne tue jamais.*"

If the ratio of deaths from chloroform to administrations is only known approximately, even this is lacking in regard to ether, and as regard to figures, they are no better than guess-work. In a late treatise on anæsthetics a comparison of the two was attempted, and this conclusion was arrived at—that *three* deaths occurred from ether during the first fifteen years of its use, and 77 from chloroform during the first fourteen years of its use; and during the first year ether was used there was 1 death, and during the first year chloroform was used, 9. Let us now listen to the statement of Dr. Turnbull:—In the city of Philadelphia alone ether has been used, with but one exception, since its introduction in 1846 up to the year 1878, without a single primary death, and only one recorded secondary death. General testimony of this kind, the record of frequent deaths from chloroform, the tone of the Medical Journals, together with the decided opinions of many leaders in our profession, show that the lesson can be learned from facts quite as well as from figures; and I feel that that lesson teaches us that chloroform is a far more dangerous agent than ether.

Let us now consider what experiment has to add to experience concerning the action of these two anæsthetics on the system. It is conceded, I believe, that the great source of danger in the use of anæsthetics is their influence on both the circulatory and respiratory nervous centres. The most reliable information on this point is to be obtained in the report of the Scientific Grants Committee of the British Medical Association. I will quote one or two sentences from that report that will speak for themselves. Having described the mode by which the animal was subjected to the experiment, it goes on to say—"It soon became apparent that when chloroform is given in this way there is at once a most serious effect on the heart; the right ventricle almost immediately begins to distend, and the heart presently stops, with the right ventricle engorged with blood. The heart had often, in the case of rabbits, virtually come to a stand-still within a minute of the introduction of chloroform by the method described. The contrast was most striking when ether was used instead of chloroform. Ether may be given for an indefinite period without interfering with the heart. We kept artificial respiration with ether in the circuit for an hour, not including twenty minutes occupied in producing anæsthesia, and at the end of that time the exposed heart was beating as vigorously as at first."

That chloroform injuriously affects the respiratory centre is also the opinion of this committee, and they account for it in this way—there is failure of the heart in the first instance, and the insufficiency of its subsequent pulsations caused the failure of respiration. In such a state of the circulation the respiratory centres would probably be insufficiently supplied with blood, and be consequently liable to cease acting. Can it be wondered at, that, looking at this subject both by the light of experience and experiment, the advocates of ether should be so loud in its praises and strong in their denunciation of chloroform.

May I be permitted to give my own limited experience of these two agents; and, first, as regards ether, I believe I have been the first to administer it in Belfast in a systematic manner. I have used it in the Children's Hospital for a period of five years, in the cases of children ranging between two and fourteen years of age. It took a very long time to produce anæsthesia, the struggling was sometimes painful to witness, and it was usually accompanied or followed by vomiting, besides being very disagreeable to the administrator. In some cases complete anæsthesia could not be produced, and in rare cases it had scarcely any effect. As weighing against these disadvantages was the great security I felt as regards the safety of the patient. This was always indicated by the good colour of the face, and steady, full beat of the pulse. In one case (a private one) of amputation I gave 8 ozs. of ether with scarcely any effect, and had in the end to use chloroform, which at once proved effectual.



My experience of chloroform is greater than that of ether, and although I have never been so unfortunate as to witness a death from it, I have, on many occasions, seen alarming symptoms in my own cases as well as in those of other surgeons.

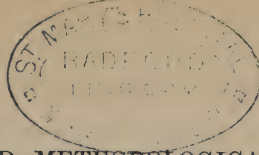
Before concluding, I will make some general statements, the truth of which, I think, is acknowledged on all sides :—1, that chloroform has never been fatal in cases of parturition ; 2, that the deaths from it are almost *nil* in military surgery ; 3, that the large majority of the fatal cases reported are those where it was administered for minor operations and operations of expediency ; and, 4, that there was culpable carelessness and ignorance on the part of those who administered it in many of the fatal cases reported.

As regards ether :—1, it is not devoid of danger to life *per se* ; 2, it is unpleasant, and difficult to administer, and has a great many drawbacks in this way that chloroform has not ; and, 3, it is a far less potent anæsthetic.

Dr. Kappeler, in his essay on Billroth's system of surgery, says—“The assumption of physiologists that the surgeon is responsible for death from ether, in contradistinction to chloroform, and that death from ether may always be avoided by precaution, stands, in my opinion, without any foundation whatever. From the experience of the operating table it cannot yet be maintained with absolute positiveness that the administration of ether as an anæsthetic has a considerably less amount of danger than chloroform. We are as little prepared to state in figures the dangers of ether as those of chloroform, since neither the number of deaths from it nor the number of administrations are known, and the few attempts made to state the proportion of deaths to administrations are mostly the product of the bitter contests, ‘ether *versus* chloroform,’ and the necessary impartiality is lacking.”

The conclusions that I have arrived at from the several considerations of the subject are—

1. That ether, although a less potent, is a safer anæsthetic than chloroform.
2. That ether should be administered in all cases where the circumstances will permit.
3. That chloroform should not be used in minor operations, or operations of expediency.
4. That every precaution should be taken beforehand against the supervention of dangerous symptoms, and that every requisite for combating such symptoms should be in readiness for immediate use.



# SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

## VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday,  
April 23, 1881.*

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin, -	333,401	788	787	1	—	8	1	7	24	9	30·7
Belfast, -	174,412	569	420	—	2	1	—	15	4	11	31·3
Cork, -	78,642	167	203	—	2	2	—	12	3	4	33·6
Limerick, -	39,353	83	97	—	1	1	—	2	—	5	32·1
Derry, -	25,242	80	64	—	—	—	—	—	1	—	33·0
Waterford, -	23,349	66	63	—	—	1	—	—	7	2	35·1
Galway, -	15,597	39	34	—	—	—	—	—	2	2	28·3
Sligo, -	10,670	10	14	—	—	—	—	—	2	—	17·1

### Remarks.

The mortality was very high in all the towns except Sligo. In twenty large English towns, including London, the registered deaths were at the rate of 22·3 per 1,000 of the population annually; in the sixteen principal town districts of Ireland the death-rate was 30·0 per 1,000. The death-rate was 22·2 per 1,000 in London, 23·0 in Glasgow, and 20·8 in Edinburgh. Omitting the deaths of persons admitted into public institutions from localities outside the registration district, the death-rate was 29·9 per 1,000 in the Dublin registration district, and 32·5 within the municipal boundary of Dublin. The high mortality was due to diseases of the respiratory organs and to constitutional maladies, the fatality of which was increased by a continuance of cold, dry, searching easterly winds. Zymotic affections were by no means prevalent or fatal in Dublin. They caused only 74 deaths, compared with an average of 152·9 deaths in the corresponding period of the preceding ten years. The most fatal diseases of this class were the continued fevers. Typhus caused 14 deaths, typhoid 7, and to so-called "simple fever" 3 deaths were ascribed. Scarlet fever and whooping-cough were rather prevalent and fatal. The latter disease prevailed epidemically in Belfast, Cork,

and Limerick. Fever caused 7 deaths in Waterford. Cold, dry, inclement weather exercised a marked influence on the mortality from respiratory diseases. To them 216 deaths were attributed, compared with a ten-years' average of 175·5 deaths. Bronchitis proved fatal in 166 instances (average = 132·9), and pneumonia caused 29 deaths (average = 25·5). At the close of the period (Saturday, April 23) the numbers of the chief cases of epidemic diseases under treatment in the principal Dublin hospitals were as follow—smallpox 0, measles 3, scarlet fever 26, typhus 103, typhoid or enteric fever 9, and pneumonia 24. The epidemic of smallpox in London unhappily continues to make way. The deaths from this disease amounted to 289, compared with 202 in the four weeks ending March 26, and 205 in the four weeks ending February 26.

#### METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of April, 1881.*

Mean Height of Barometer,	-	-	-	29·986 inches.
Maximal Height of Barometer (on 28th at 9 a.m.),	-	-	-	30·261 „
Minimal Height of Barometer (on 30th at 4 p.m.),	-	-	-	29·488 „
Mean Dry-bulb Temperature,	-	-	-	45·5°.
Mean Wet-bulb Temperature,	-	-	-	42·5°.
Mean Dew-point Temperature,	-	-	-	39·0°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·239 inch.
Mean Humidity,	-	-	-	78·6 per cent.
Highest Temperature in Shade (on 28th),	-	-	-	59·4°.
Lowest Temperature in Shade (on 3rd),	-	-	-	33·8°.
Lowest Temperature on Grass (Radiation) (on 1st),	-	-	-	27·4°.
Mean Amount of Cloud,	-	-	-	62·5 per cent.
Rainfall (on 13 days),	-	-	-	1·329 inches.
General Directions of Wind,	-	-	-	E.

#### Remarks.

Very cold, dry, parching easterly winds prevailed until the 10th, and again from the 14th to the 22nd; after that date the weather became mild and showery, continuing so to the close of the month. Throughout the week ending Saturday, the 9th, an area of high barometrical pressure was found over Scotland, or stretching across the North Sea to Norway and Sweden, while an area of low pressure lay over the Bay of Biscay and the Peninsula; consequently gradients for easterly winds existed over England and Ireland. At first the E. wind blew very strongly, a heavy easterly gale being felt on the 3rd in the English Channel. After the 6th the wind lulled gradually. On the night of the 10th a soft, refreshing rain fell, the first which had been measured in Dublin since

March 25th. A few showery days followed. On the 13th the rainfall was .592 of an inch at Fitzwilliam-square, Dublin, and .790 of an inch at the Ordnance Survey Office, Phoenix Park. The easterly wind now resumed its sway, the polar current of air causing dry, searching weather, and almost arresting the progress of vegetation. There were some showers of cold rain or hail and sleet on the 19th and 20th. On the 22nd the wind began to back to the N.W. and W., so that a period of milder weather set in, which lasted to the end of the month. The mean temperature of the week ending Saturday, the 30th, was  $50.4^{\circ}$ , or about  $10^{\circ}$  above that of the week ending Saturday, the 9th ( $40.7^{\circ}$ ). On the 29th and 30th a depression lay over Ireland, and refreshing showers fell in abundance, giving a great impetus to vegetation. The mean temperature of the whole month was about  $2.5^{\circ}$  below the average for April in the preceding fourteen years. Sleet fell on the 19th and 20th, hail on the 20th and 26th. The atmosphere was somewhat foggy on the 15th 16th, 17th, and 28th. An indistinct parhelion was observed at 6 30 p.m. of the 26th.

## PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

### HAS OUR VACCINATION DEGENERATED ?

UNDER this title Dr. Caméron, M.P. for Glasgow, and a distinguished Medical Graduate of the University of Dublin, contributes an article to the last (the May) number of the *Fortnightly Review* which deserves the serious consideration of all medical men. Dr. Cameron adduces a large number of statistical facts which go to prove that an affirmative answer must be given to the question he starts with. The circumstance that the statistics upon which the paper is based were collected for reasons widely different from the object which its author had in view renders the results obtained from them more reliable and striking. Dr. Cameron shows that the protective power of vaccination against smallpox manifests itself in two ways—first, by rendering vaccinated persons when exposed to smallpox infection less liable to take the disease than unvaccinated persons in similar circumstances; and, second, by the smaller mortality from smallpox among vaccinated persons as compared with the death-rate from the same disease affecting the unvaccinated. The mortality of the disease in unvaccinated persons has varied considerably in various epidemics, ranging from 25 to 38 per cent., and in the last decade mounting to about 45 per cent.; but while the increase in the death-rate of natural smallpox from the lowest to the highest point had not doubled itself, that in smallpox after vaccination had increased from



1 per cent. previous to 1830 to over 10 per cent. in the course of half a century; and what is particularly remarkable is, that this increase of mortality has occurred in the best vaccinated classes of cases. Probably the most important and striking point which Dr. Cameron adduces to show that our vaccine lymph is degenerating, and that as a necessary consequence its protective effects have of late years shown themselves still more temporary than in the earlier days of vaccination, before that degeneration had made so small progress, is presented in the annexed table:—

	Ratio of Cases of Children of 10 and under to Total Cases of Post-Vaccinal Smallpox	Ratio of Deaths in Children of 10 or under to Total Deaths from Post-Vaccinal Smallpox	No. of Observations on which Percentages are based.
Period 1824-51	2·4	2·7	6,187
Period 1870-9	12·4	11·3	11,322

Dr. Cameron considers—and there are many, more especially abroad, who will agree with him—that the facts which he has so diligently brought together in his able paper show beyond possibility of a doubt the following conclusions:—“1. That the protection against smallpox afforded by the vaccine lymph in use in this country, though still great, has become much less than it was when the lymph had undergone comparatively but a few transmissions through the human subject. 2. That the number of cases of smallpox occurring now per million of vaccinated persons is very much greater than that shown in the records of vaccinated populations in the earlier part of the century. 3. That the death-rate in recorded cases of post-vaccinal smallpox has progressively increased in all cases, with and without marks, from 1·75 per cent. in 1819-35 to over 10 per cent. in 1870-9, and in cases with marks from 6·9 per cent. in 1836-51 to 9·2 per cent. in 1870-9. 4. That this increase in mortality has been most remarkable in the best vaccinated classes of cases, the death-rate in cases with three or more cicatrices in 1870-9 being twice what it was in 1852-67; and the death-rate in cases with three or more good cicatrices in 1876-9 being thrice what it was in 1852-67. 5. That the proportion in which vaccinated children are attacked and cut off by smallpox has alarmingly increased, being many times greater during the last decade than it was thirty or forty years earlier; and 6. That while the death-rate in smallpox occurring in unvaccinated persons has varied in the different groups recorded, and was exceptionally high during 1870-9, the progressive advance of mortality in post-vaccinal smallpox is not attributable to epidemic

influence, being equally observed in successive groups of cases in which the mortality from natural smallpox shows a diminution." Dr. Cameron postpones to another occasion the consideration of the theoretical aspect of the subject and the remedy for the state of matters which he has disclosed.

#### TREATMENT OF MAMMARY ABSCESS.

IN the *American Journal of Obstetrics*, Dr. Hiram Corson gives his views and some personal experience as to the treatment of this affection. After alluding to the usual routine of cloths steeped in hot vinegar, plasters, and poultices, Dr. Corson states that for the past twenty-seven years he has used no other remedy but cold applications, his method being to fill a bladder part full with cold water and ice in it, and apply to the inflamed part. This application of ice-water affords almost immediate relief, and if suppuration has not taken place will always prevent it. And indeed, in cases which have already "suppurated, been poulticed, and broke," or been lanced, this method is "just as applicable, efficient, and safe."—*Indiana Med. Reporter*.

#### TREATMENT OF ECZEMA OF THE EAR.

KNAPP (*Arch. of Otolology*, ix. 4) thinks that nitrate of silver in the treatment of chronic eczema of the ear produces contraction of the softened and swollen integument, and affords protection from moisture, wind, cold, and great heat, better than any other remedy; and may be used in all degrees of intensity, from a mild astringent to a powerful caustic. The parts should first be thoroughly cleansed, the crusts softened and completely removed, and then the surface thoroughly dried, before the agent is applied. After the eschar has formed, the parts should again be gently dried, and covered with picked linen or lint, which has been smeared with pure cold cream, or a 1 per cent. yellow mercurial ointment. The application should be made once a day.—*N. Y. Med. Jour.*, April, 1881.

#### THE TREATMENT OF ANEURISM BY THE ELASTIC BANDAGE.

THE case reported by Surgeon Reid, of the English Navy, in which a popliteal aneurism was cured by Esmarch's bandage followed by compression of the femoral artery, has attracted considerable attention since its publication in 1875. Dr. Lewis A. Stimson, Surgeon to the Presbyterian and Bellevue Hospitals, New York, has communicated in the *American Journal of the Medical Sciences* for April, 1881, a series of sixty-two cases in which the bandage or rubber tubing or both together have been thus used for the cure of aneurism, collated from various sources. Excepting one example each of axillary, internal circumflex, and anterior tibial, the aneurisms were all of the femoral or popliteal arteries, the

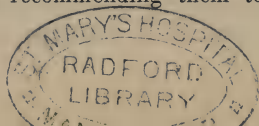
great majority being the latter. In two cases in which death followed the employment of the method, the sac and tributary artery were found filled with recent clot. In the successful cases, pulsation was felt in the tumour upon removing the bandage, but remained permanently absent if digital or instrumental compression was continued for several hours subsequently. In a large proportion of cases this treatment was eminently successful. Dr. Stimson concludes that we have in the elastic bandage an efficient means for safely shortening the duration of the treatment by compression of popliteal and some femoral aneurisms, and lays particular stress upon careful attention to the details of the method, by the application of which a successful result may be hoped for. The greater efficiency and the more speedy action of the method are apparently due mainly, if not entirely, to the arrest of the circulation through the collateral channels as well as through the main artery, thus securing the absolute stagnation of the contents of the sac. A valuable bibliography of the operation is appended to Dr. Stimson's article.

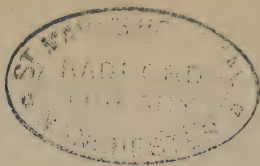
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## NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

### *Medicinal Plasters.*

THROUGH the courtesy of Mr. W. Mather, of Hulme, Manchester, we have been favoured with a selection of samples of several new specialities in plasters in india-rubber combinations—*e.g.*, Belladonna, Capsicum, and Surgeon's Rubber Adhesive, and also of Mustard Plaster, spread upon flexible cloth. We have examined each of them, and consider that they are well made, and calculated to answer all the purposes for which they are intended. They are put up in the porous form, 7 by 5 inches, and also in one yard lengths, in stout pasteboard boxes. Mr. Mather presumably offers these plasters in competition with the elegant adhesive combinations put forward a few years ago by Messrs. Seabury and Johnson, of New York, who claim to have originated the successful application of india-rubber as a basis for medicinal plasters. The American products adhere without heat or moisture, and the muslin on the face of the plaster is easily removed previous to application. We note upon each of Mr. Mather's india-rubber preparations these directions—"Apply heat if not adhesive enough," and "If the cloth adheres to the plaster, wet it, and it can be easily removed." This latter procedure, which, to judge from the samples before us, it is indispensable to take, somewhat detracts from the practical usefulness of these plasters, which seem to us to be rather too soft and sticky. Mr. Mather offers these plasters at a moderate price, and we have pleasure in recommending them to our readers as well worthy of trial.





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